

ARCHITECTURAL RECORD

1 January 1958

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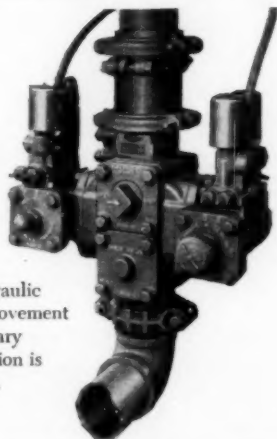
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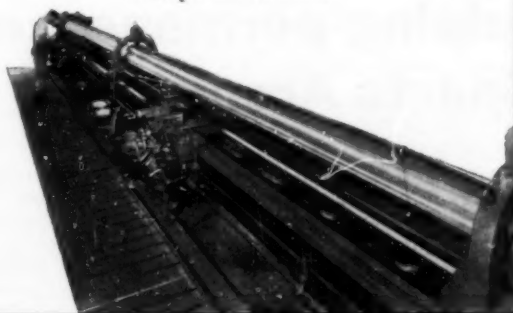
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Long Island Arena, Thomas Lockhart, Manager
Architect: J. H. Van Alst, Centerport, L. I., New York
Contractor: Frick Company, Waynesboro, Pennsylvania

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ARCHITECTURAL RECORD

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Above: Entrance and Cafeteria Building, Eastern Surgical Dressings Plant, Johnson and Johnson, North Brunswick, N. J. Walter Kidde Constructors, Inc., Designers and Builders; mosaic mural by Max Spivak. Joseph W. Molitor photo. Below: Column Sections from Presidential Palace, Cuba, by José Luis Sert.

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Next Month in the Record

BUILDING TYPES STUDY: ELEMENTARY SCHOOLS

Seven schools in seven states present seven distinctive solutions by Architects Warren Ashley; Vincent Kling; Mitchell & Ritchey; Narumore, Bain, Brady & Johanson; George Pierce and Abel B. Pierce; Eberle M. Smith; and The Architects Collaborative.

MINORU YAMASAKI'S CONSULATE IN KOBE

One of the first completed buildings under the FBO program speaks of America in a skillful and sympathetic language.

A BANK OF IDEAS

A stimulating proposal for the State Bank of Clearing, Chicago, by Architect Harry Weese.

NERVI'S UNESCO STRUCTURAL SYSTEM

A sketch and photographic report on the structural fabric of the remarkable building by Breuer, Zehrufuss and Nervi.

THE EDUCATIONAL WORK OF EDWARD D. STONE

In the third installment of Stone's exciting current work the RECORD presents three dormitory groups, three libraries, a dining hall, a fraternity house and a new campus.

ACCENT: ENGINEERING

A report on the continuation of Princeton University's study of curtain wall construction with emphasis on jointing problems.

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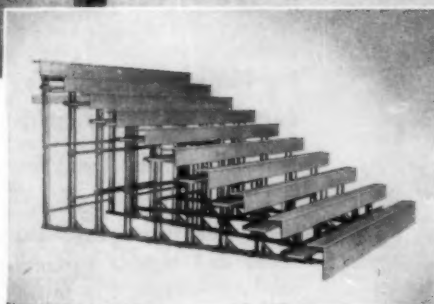
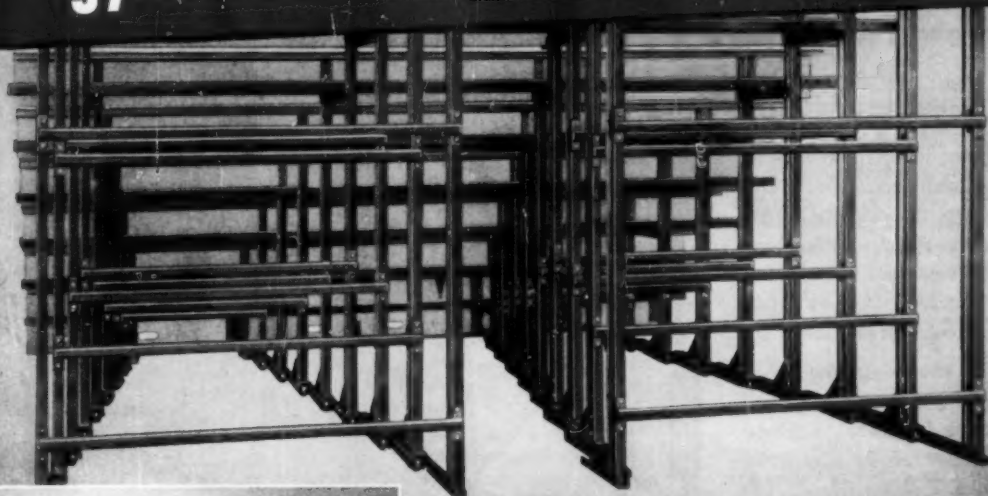
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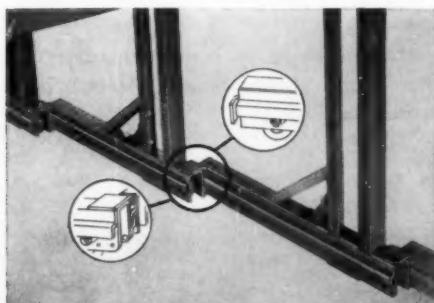
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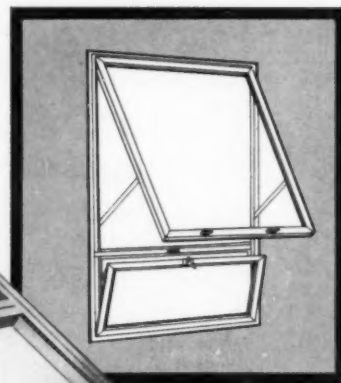
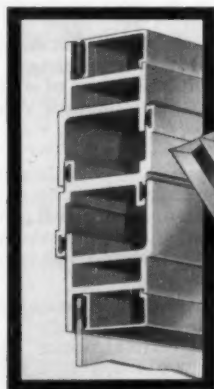
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Architecture USA

Architects who have been hearing more blame than praise for the state of American architecture might spend a healing hour with "Architecture USA," the 10½ x 14-in. 50-page pamphlet recently published by the United States Information Agency for the use of its posts overseas. Well illustrated with handsome photographs of both historical and contemporary examples, the publication offers "a glimpse of past and present America as revealed through its architectural development."

American architecture, notes the introduction, "is the result of many cultures, blended and molded by time and events, by natural resources and climate, by knowledge and creativeness, and by freedom of thought and action." And here is where American architects are reported to be: "Human needs have always influenced architecture. Today it is more fully understood that these needs vary as much as do the demands of climate, materials and geography. There is a growing appreciation of tradition, that while youth may have beauty and vitality, age brings depth and character, and that architectural qualities that have stood the test of time may well be fused with newer forms. American architects are striving to satisfy the needs of the people with structures that provide esthetic as well as practical satisfactions. An effort is being made to utilize more fully the fruits of man's labor for the enhancement of his environment in all aspects that touch his life."

Poem

One more comment—supremely succinct—on that famous October issue of the *Ladies Home Journal* comes from Prof. C. E. ("Chicago gets the shaft") Stousland, architecture head at Ohio's Miami University. "The New Nun's Tale, or, get your remodeling hands off my habits" is the title, and the first verse says plenty:

the frost is on the pumpkin
the Journals on the stands
Miss Thompson's on the architect
and anything he plans

The Good Old Days

With the mellow chords of Auld Lang Syne still in the air, it seems like a good time to remind the same *Ladies Home Journal* that its authors once (December 1895, for example) *reasoned* with architects' prospective clients: "And now a few words on behalf of the builder and architect: Don't expect your house to be perfect; wood will shrink, plaster will crack more or less, and doors and window stick; and don't expect them to keep the house in repair. They cannot afford to do more than put it in proper condition when they hand it over to you." What's happened to the old spirit?

Architects Anonymous

A recent issue of *Buildings*, *The Magazine of Building Management* carried a two-page story called "The Changing Skyline" and showing photographs of six new buildings, only two of them accompanied by architectural credits. In pursuit of a line of inquiry resumed whenever its attention is drawn to such an omission in another publication, the RECORD asked *Buildings* why no architectural credit on four of the buildings, and received from Managing Editor Ray Walther this reply: "Regarding editorial new construction and modernization material, our first concern is to credit the building management or rental firm involved. This, of course, is in keeping with the nature of our audience. In addition, we always credit the firm which provides us with background material. This may be either a manufacturer, architect, builder, etc. If space permits, regardless of the reference, we usually try to mention the architect. However, this isn't always possible. In a highlight feature such as the one you mention, there is room for just so many credits,

in addition to the more important purpose of describing the buildings involved."

"The Trouble with Architects"

According to Editor Herbert L. Mann of *Contractor's Electrical Equipment*, "the national magazine for electrical contractors," the trouble with architects is they will not provide information on request for news stories on projects which are of interest to him for their implications in his field. Mr. Mann, who says he *always* credits architects, complains that nine times out of ten, in fact, he never even gets a reply to a query directed to an architect.

Our Readers Write

"Your timely article, 'American Architecture Designed for Export' (AR, Oct. 1957, pages 237-242), 'was a visual treat,' writes Architect Ben Ronis of Washington, D. C., 'but at this time of increasing need for respect for American opinion abroad, I could not keep from thinking that perhaps to millions of knowing individuals in other countries we must appear to live in a world of fantasy, scorning to practice what we preach, when those foreigners have seen our recent governmental buildings in Washington, D. C., and elsewhere in the United States, or have read the petty bickering over the tremendously magnified importance of the East Front of the Capitol and the criticism of the design of the Air Academy by high government officials.'"

Alan Dunn for Brussels!

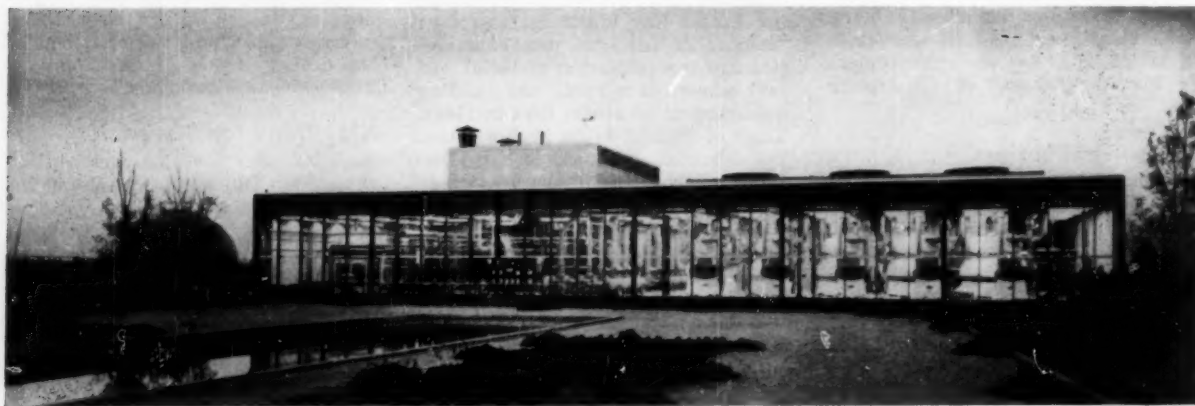
Some of your favorite cartoons—of those Alan Dunn has been doing for the RECORD over the years—may become part of the American exhibit at the Brussels World's Fair 1958. The committee in charge of U. S. building exhibits has asked permission to use several of Dunn's RECORD cartoons on the walls of the "exploded house", part of the exhibit in Ed Stone's American Pavilion.

Buildings in the News

NEW YORK INTERNATIONAL AIRPORT OPENS MAJOR BUILDINGS OF ITS "TERMINAL CITY"



International Arrival and Airline Wing Buildings, (aerial view above) will be dominant structures of Terminal City (key map at left). They and the Central Heating and Refrigeration Plant (below) were designed by Skidmore, Owings and Merrill on the basis of functional and physical plans prepared under the direction of Thomas M. Sullivan, Chief of the Port of New York Authority Aviation Planning Division, whose office conceived and planned Terminal City in consultation with Architect Wallace K. Harrison. Individual unit terminals (three shown across-page) are the work of the various architects commissioned by the sponsoring airlines. The Arrival Building houses all customs, health and immigration inspection services, as well as restaurant and cocktail lounge, coffee shop, barber shop, several stores, waiting rooms and press accommodations. Wing Buildings house foreign flag airlines



The first major structures to be completed in the \$150 million "Terminal City" development at New York International Airport at Idlewild, Queens, were dedicated and opened for business last month. The \$30 million International Arrival and Airline Wing Buildings will handle all international air passengers entering the United States through the Port of New York and thus become, according to their proud sponsor, the Port of New York Authority, "the country's air age front door."

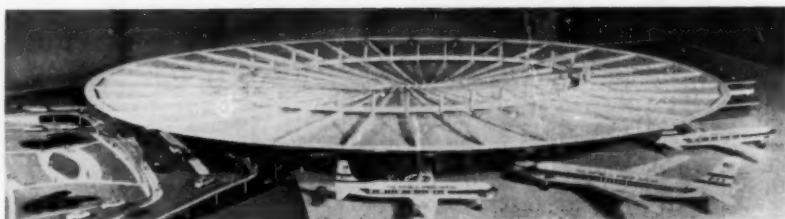
The design of the 655-acre Terminal City itself was dictated by the realities of anticipated traffic at Idlewild—11,100,000 passengers by 1965, some 3,300,000 of them overseas passengers. A single terminal building to serve this traffic would have required a structure over two miles long, according to Port Authority estimates. Therefore the decision was made to concentrate in a single structure only the flights requiring clearance through Customs and other Federal inspection services. Each airline will have its own terminal facility for handling flights not subject to such clearance. Major U. S. flag lines are building individual terminal buildings on sites around the perimeter of the terminal area. The overall scheme provides for handling 140 aircraft at one time. Facilities of Terminal City upon completion—scheduled for 1960—will also include an operations building, ten miles of roadways, seven miles of taxiways, parking space for 6000 cars and a 220-acre landscaped "International Park." A specially designed lighting system will "cover the entire area with a blanket of never-ending daylight."

The concrete, glazed brick and masonry Arrival Building, three stories high and approximately 760 ft long by 640 ft deep, has two double-deck 240-ft "fingers" or arcades. Incoming passengers will use the first floor of the arcades in moving to the inspection area. Outgoing passengers will be at second-floor level until they descend at their particular gate positions. The fingers connect with Federal inspection services on the first floor. The Wing Buildings, connecting with either end of the Arrival Building, will house ticket counters, lobbies and offices of the foreign-flag airlines.

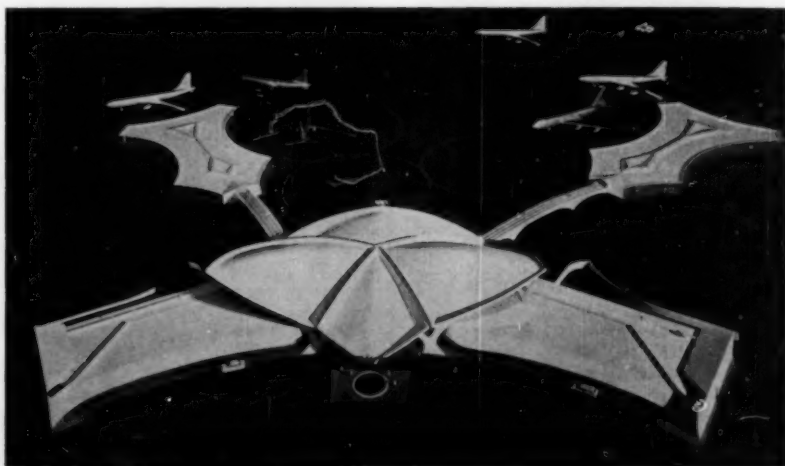
American Airlines passengers will move from individual lounge at each gate position through enclosed corridors which will be extended from the lounge to fit snugly around airliners' doors. This "telescopic corridor" is "now under development." Kahn and Jacobs, Architects



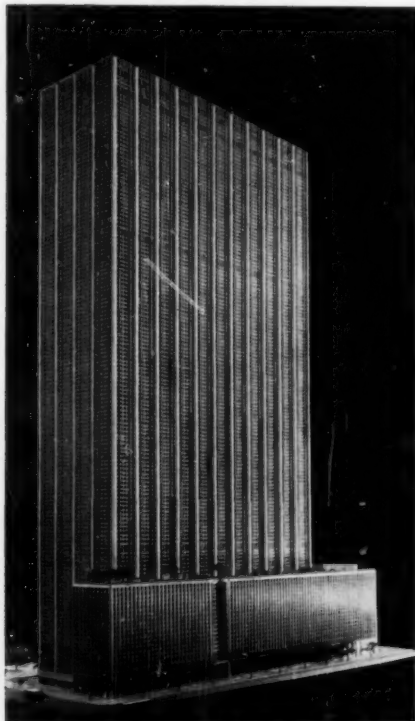
Pan American will shelter emplaning and deplaning passengers, baggage and cargo and keep distance from terminal to planes at minimum by parking planes under giant extension of terminal roof, which will be cantilevered 110 ft out over parking apron. Tippetts-Abbett-McCarthy-Stratton, Architects-Engineers; Ives, Turano and Gardner, Associate Architects



Trans World Airlines will provide moving (and stationary) sidewalks to take passengers from terminal through glass-enclosed corridors to gate houses adjacent to plane boarding areas. In this building a dynamic architectural expression of purpose and occasion was deliberately sought. Eero Saarinen and Associates, Architect



OFFICE TOWERS AROUND THE NATION



New York—Time & Life Building; Harrison & Abramovitz & Harris, Architects. The 47-story limestone, aluminum and glass tower and its seven-story L-shaped base structure (to provide bulk space for certain tenants) will cover 75 per cent of site, landscaped plaza the rest; provide 1,525,000 sq ft of rentable area, 600,000 sq ft of it to be leased by Time Inc. Cost is estimated at \$70 million



New York—666 Fifth Avenue; Tishman Realty & Construction Company, owners and builders; Carson & Lundin, Architects. New neighbor to the north of Rockefeller Center, this 38-story building has "world's largest bolted steel framework" and "world's largest aluminum curtain wall." Occupying 200 by 300 ft plot, it contains over a million sq ft of office space. Estimated cost: \$40 million



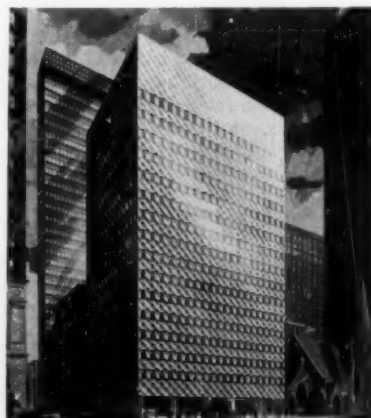
New York—717 Fifth Avenue; Corning Glass Works, sponsor; Harrison & Abramovitz & Abbe, Architects. The 28-story tower will have skin entirely of green-tinted glass; it will be set back 12 ft from the lot line, with the corner left open, to provide 3000-sq-ft landscaped plaza. Corning and associates will occupy less than half the 365,000 sq ft area. Contractor: George A. Fuller Company



Miami—First National Bank, DuPont Plaza; Weed, Russell, Johnson Associates, Architects. The 17-story structure, scheduled for completion late this year, will provide 450,000 sq ft at estimated cost of \$6 million. Bank will occupy first three floors (about 40,000 sq ft each); the other 14 floors of tower space will be rented to tenants. Structure is field-welded structural steel, facade precast concrete panels faced with ceramic tile



Boston—The Travelers Insurance Companies, 125 High Street; Kahn and Jacobs, Architects. The building will rise 16 stories (one more than rendering shows), its center section, housing utility core, three stories higher; it will contain 298,000 sq ft of floor area. Cost is estimated at \$7 million. The Travelers tentatively plans to occupy four floors and lease 12. Structure is steel, facade blue and white brick. Building will be air conditioned



Pittsburgh—Porter Building, Grant Street and Sixth Avenue; H. K. Porter Company, sponsors; Harrison and Abramovitz and Abbe, Architects. A 17-story tower to be built in Pittsburgh's Golden Triangle at an estimated cost of more than \$7 million, the new building will house the company's general offices. It will be completely air conditioned and will have automatic elevators. Completion of construction is scheduled for late this year

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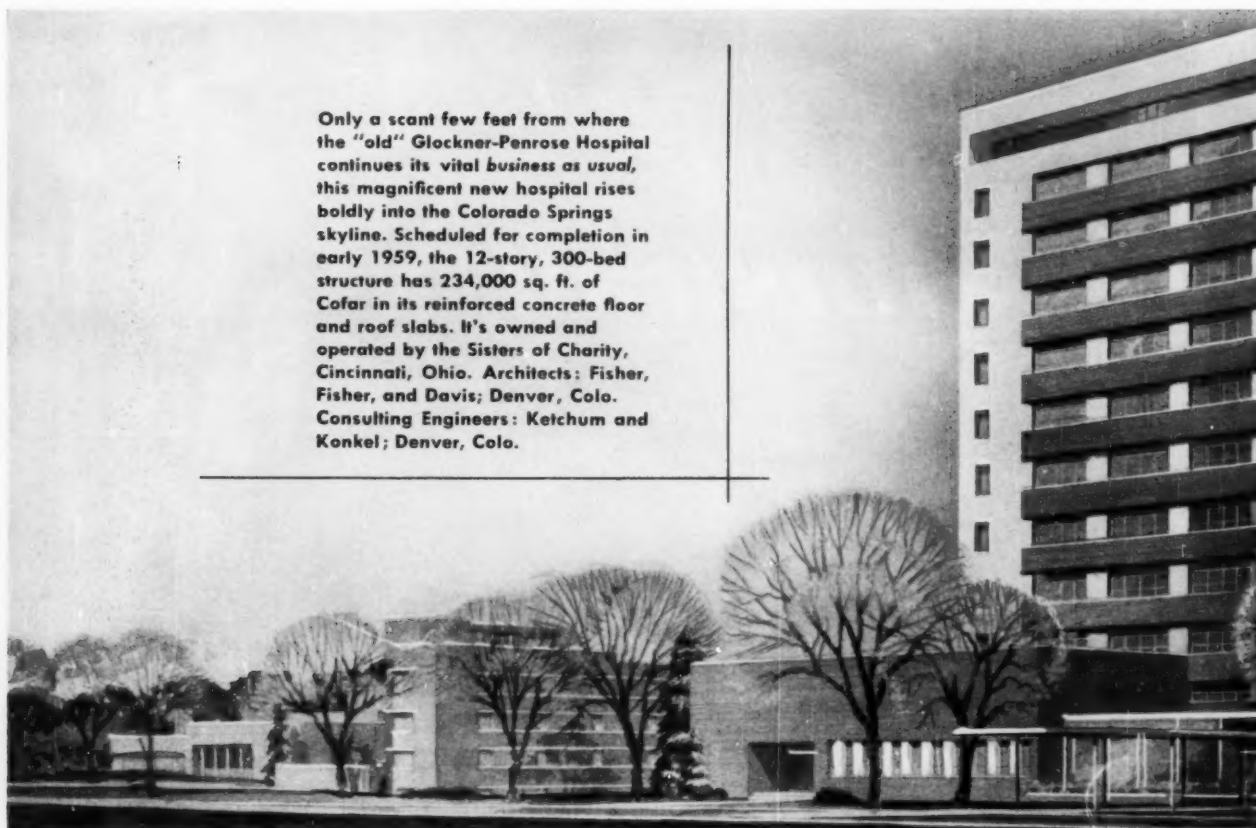
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AW-1

Only a scant few feet from where the "old" Glockner-Penrose Hospital continues its vital business as usual, this magnificent new hospital rises boldly into the Colorado Springs skyline. Scheduled for completion in early 1959, the 12-story, 300-bed structure has 234,000 sq. ft. of Cofar in its reinforced concrete floor and roof slabs. It's owned and operated by the Sisters of Charity, Cincinnati, Ohio. Architects: Fisher, Fisher, and Davis; Denver, Colo. Consulting Engineers: Ketchum and Konkel; Denver, Colo.



How Granco's COFAR® helps build new Colorado Springs



GENERAL SUPERINTENDENT Don Ingle of Lembke Construction Company, Colorado Springs: "With Cofar, our whole operation is simpler. We use the lower flange of beams to support temporary shores so there's no mass of vertical wood supports to worry about. Trades seem to work so much easier, and Cofar T-wires are ideal to tie to."



COFAR ERECTOR Bob Hatch of Southwestern Transfer Company, Albuquerque: "Cofar's biggest advantage is *easy handling*. One man can place it as fast as another can weld. And the other trades can follow right behind because Cofar, with temporary shores, easily fulfills all requirements and needs for overhead safety planking."

BEST place to evaluate performance of building materials is the job-site. At Glockner-Penrose Hospital, Cofar again proves it's the most economical way to combine concrete forming and reinforcing in *one* operation—with maximum design flexibility. "Spotted" by a giant crane, Cofar was quickly placed and welded to structural steel, forming a working platform. Trades moved in fast, concrete was placed even as Cofar placing proceeded on floors above. Next time, save manpower, cut costs for your clients . . . specify Cofar!



construction team hospital faster, at lower cost

How reinforced concrete slab construction is simplified when Cofar is specified



Cofar units are 2½ ft. wide, weigh only 2 lbs. per sq. ft., are often handled by one man. Delivered shop-cut, ready to place, Cofar reduces storage problem on crowded job-sites.



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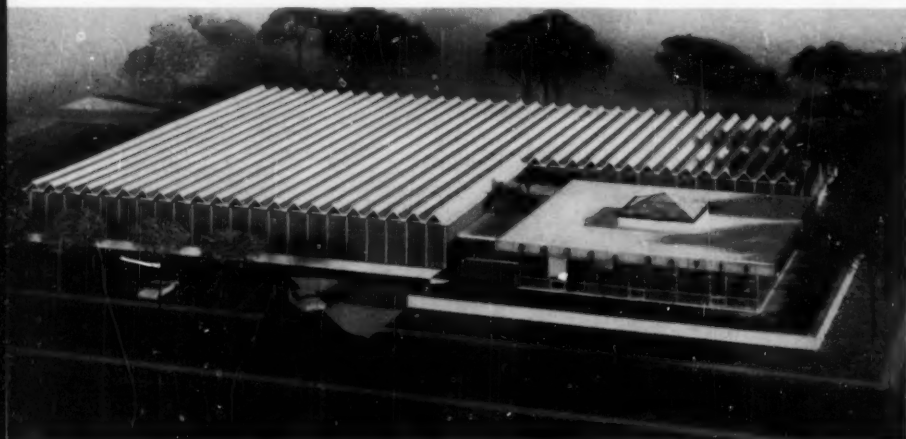


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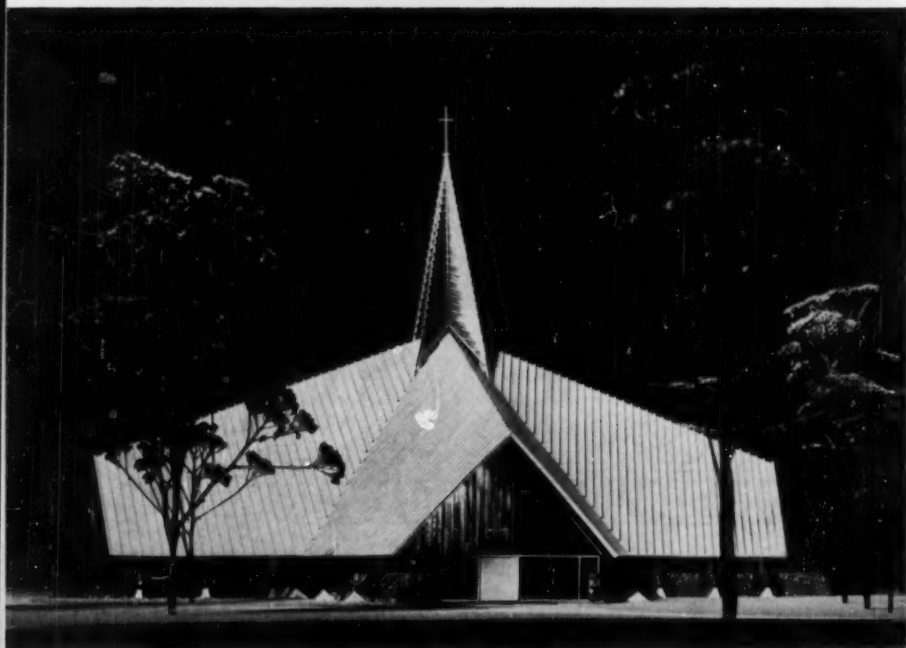
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Buildings in the News



Branch office and warehouse to be constructed for pharmaceutical firm of Parke-Davis in Skokie, Illinois; Yamasaki, Leinweber and Associates, Architects. Building, scheduled for completion in November, will have reinforced concrete roof, brick walls and—for office section—large expanse of glass. Warehouse section will be approximately 40,000 sq ft; office 6000 sq ft. Estimated cost: \$500,000



Christ Chapel (left) for Episcopal Academy, Overbrook, Pa.; Vincent Kling, architect. Fund-raising campaign is now under way to raise \$350,000 to construct the chapel, designed to "express the central role of religion" at the 172-year-old Academy and "the freshness, directness and simplicity of the young boy's attitude toward God and the world." Plan is a Greek cross, with altar at center and seating around it in three transepts. Roof is ribbed copper, steeple glass enclosed, walls of native field stone. Within, laminated wood structure and stone walls will be left exposed; gable ends above doors will be stained glass

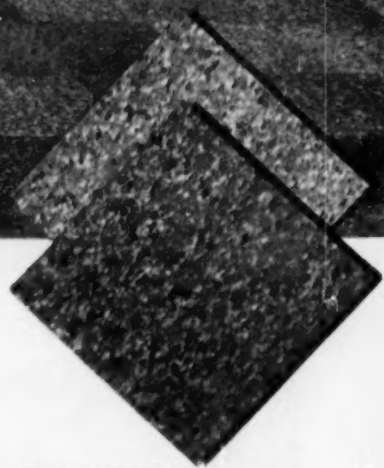


Revised design (below) of new Law School Building for University of Chicago; Eero Saarinen and Associates, Architect. Units include (from left) elliptical-shaped auditorium and court room; classroom and seminar structure; six-story main section containing library, stacks, faculty offices, student and public rooms and fronting on large reflecting pool. At right are residence halls. Estimated cost: \$4,100,000

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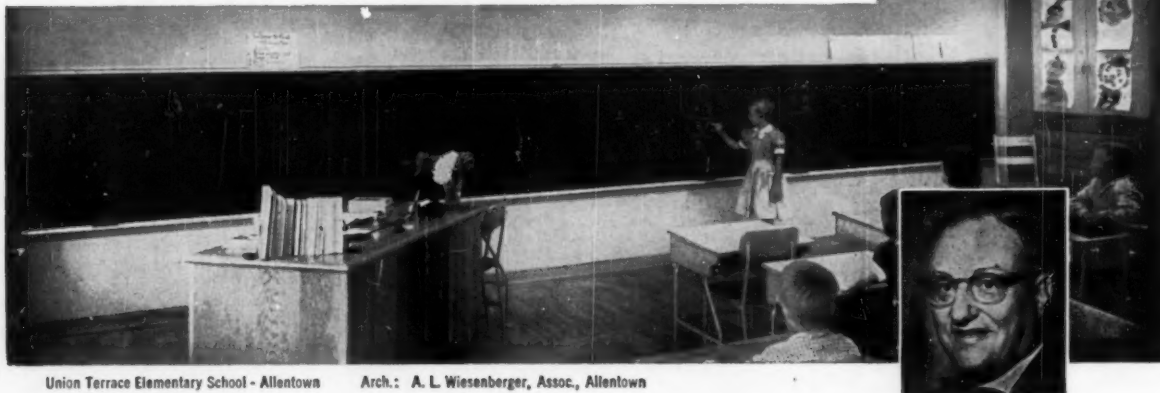
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Union Terrace Elementary School - Allentown

Arch.: A. L. Wiesenberger, Assoc., Allentown



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... says Mr. Paul J. Fink, Assistant to the Superintendent of Schools



Midway Manor Elementary School - Allentown
Arch.: Heyl-Bond-Miller, Allentown



Muhlenberg Elementary School Addition - Allentown
Arch.: Lange & Everett, Allentown



South Mountain Junior High School - Allentown
Arch.: Heyl-Bond-Miller, Allentown



Vocational Annex to Senior High School - Allentown
Arch.: George E. Yundt, Allentown

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That's the feeling of Mr. Paul J. Fink of the Allentown School District. And the facts bear it out. Since 1950, this district has renovated or built additions to 7 elementary schools, built 2 new elementary schools and a junior high school, added a vocational annex to the senior high school, and construction is now under way for another new junior high school. In each case, natural slate chalkboards were specified.

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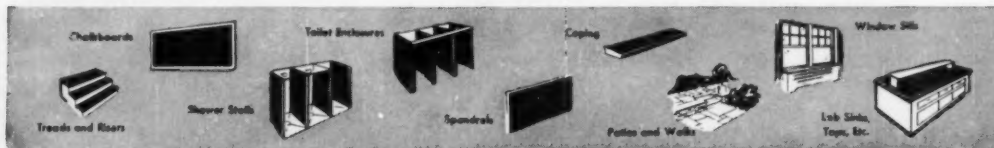
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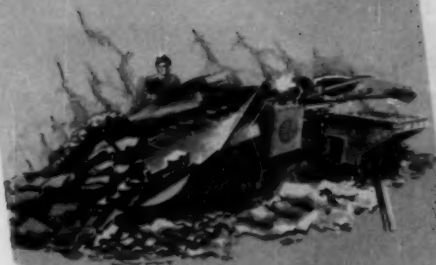
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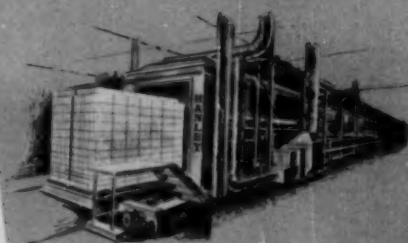
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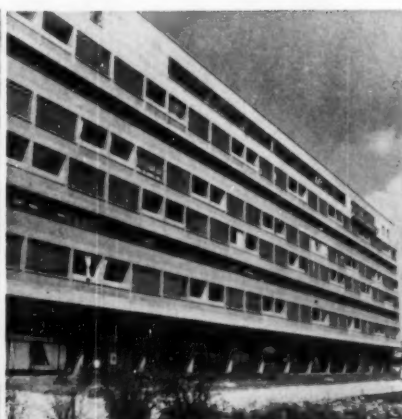
News of Architecture Abroad

FIRST LOOK AT ARCHITECTURE EXHIBITION OF SÃO PAULO'S IV BIENNAL

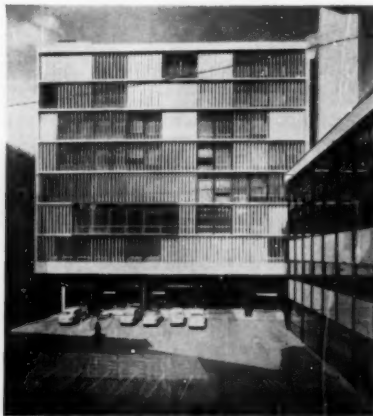
The only international exhibition of architecture which is regularly repeated under the same auspices is that sponsored by Sao Paulo's Museum of Modern Art in connection with its Biennial programs. For the IV Biennial, held during the three months just past, a selection committee composed of Architects Francisco Beck, Edouardo Kneese de Mello, Plinio Croce and Maria Henrique Glicerio Torres chose the works of 142 architects from 21 nations, including 13 from this country, from works submitted by 205 architects. Five of the non-U. S. projects selected are shown here. A later report will show all the award-winners (none U. S.).



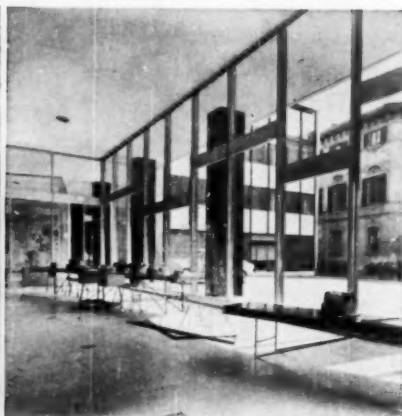
YUGOSLAVIA—Apartment building at Zagreb; Drago Galic, Architect



BRAZIL—Apartment building in Rio de Janeiro; Maurice Sued and Marcellus Fragelli, Architects



ITALY—Olivetti office building, Milan; Gian Antonio Bernasconi, Annibale Focchi and Marcello Nizzoli, Architects. This building, the "Palazzo Olivetti," was the winner of the only award in the commercial building category



SWITZERLAND—Industrial building, Zurich; Hans U. Gubelin, Architect



ARGENTINA—Apartment building, Buenos Aires; Alberto and Luis Morea, Architects; view at right is landscaped interior court lit by skylights



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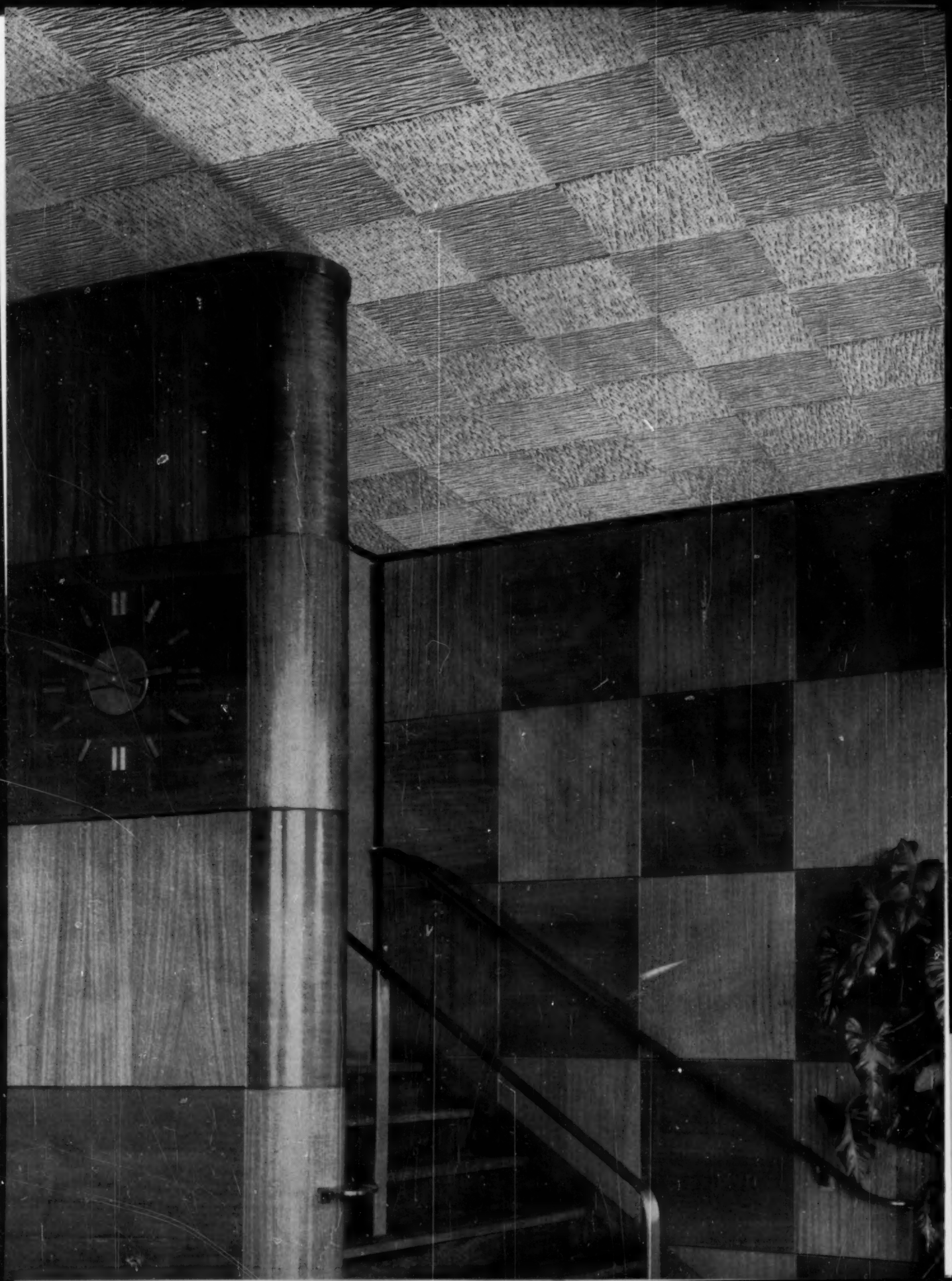
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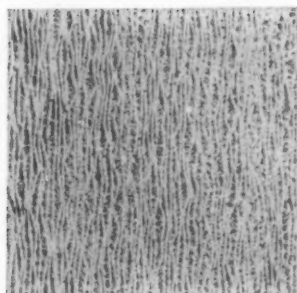
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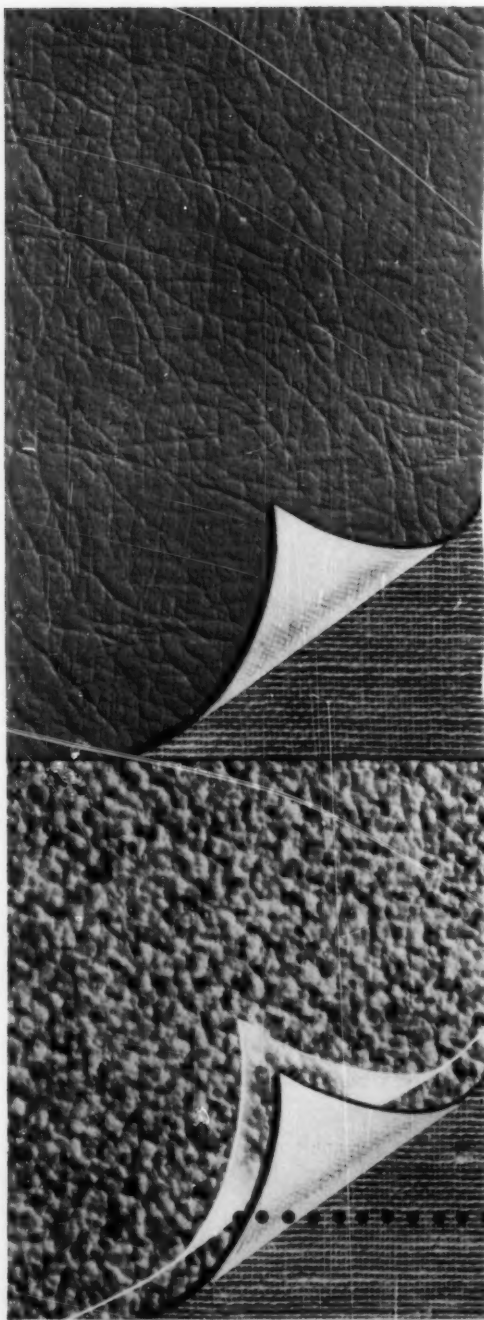
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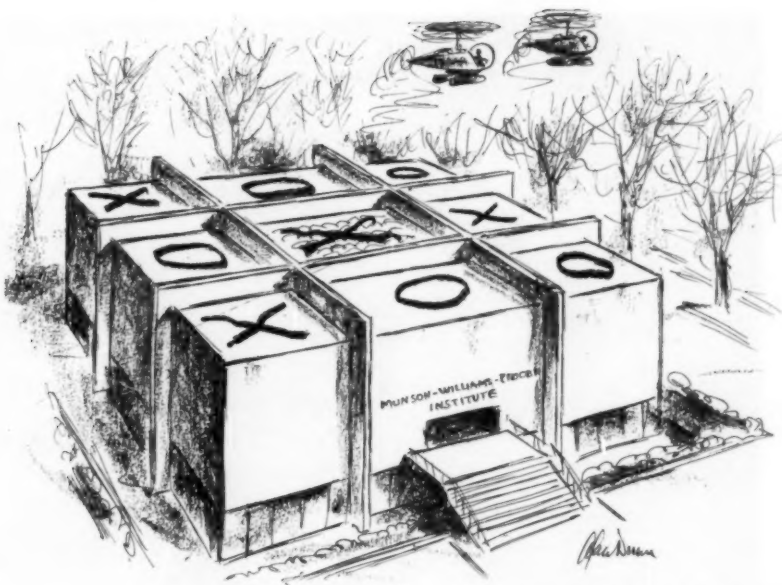
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—Drawn for the Record by Alan Dunn

CREATIVE STRUCTURES: APPEAL IS THERE FOR EVERYONE

That the subject of new structural concepts is bound to attract a good-sized, enthusiastic audience to a meeting is not particularly news. (Prestressed concrete, plastic design, thin shells and so on. But registration for the Third National Construction Industry Conference, "Creative Trends in Structural Design," held at the Congress Hotel in Chicago, December 11 and 12, so exceeded expectations that it was necessary to accommodate overflow crowds by means of closed circuit TV (never underestimate the power of technology!). At this meeting, sponsored by the Armour Research Foundation of Illinois Institute of Technology, there were over 700 in attendance, breaking down roughly into 30 per cent architects, 35 per cent engineers, 15 per cent educators, 15 per cent manufacturers and five per cent government personnel.

Instead of being devoted to only a single aspect, this program was all-embracing, covering (1) form; (2) materials; (3) methods and (4) applications.

Familiar faces were there: Severud, Candela, Tedesko, Beedle and Hognestad. As often happens where architects are gathered, slides of dramatic buildings, for example those of Candela, drew bursts of applause.

Walter Bird of Bird-Air Structures opened the program with his discussion of "Air-Supported Structures," those balloon buildings that have been used for radomes and storage structures, and are now being

proposed for swimming pools, theaters, skating rinks, etc.

Hyperbolic paraboloids in all shapes and sizes, and in magnificent combinations, were shown by Felix Candela. Thin shells of other types were discussed at some length by Dr. Anton Tedesko of Roberts and Schaefer Co.

Fred Severud said that there wasn't such a thing as a pure cable structure—that there had to be something to hold the cables up. In fact, thin shells and cable structures are often combined for this purpose.

In Session II, "Prestressed and Lightweight Concrete" was taken up by Joseph J. Shideler of the Portland Cement Association. "Fiber-Reinforced Materials," that is, plastics using fiber reinforcement, were analyzed by General B. S. Kelsey of Owens Corning Fiberglas Corp. The prospects for and uses of "Lightweight Metals" were talked about by C. Robert Lillie of Armour Research Foundation. And "New Developments in Timber" were covered by Elon E. Ellis of Timber Structures, Inc.

In Session III, determination of stresses on paper, in models and via machines, through the latest theories of structural analysis, were looked at in some detail.

A well-known proponent of plastic design, Prof. Lynn S. Beedle of Lehigh University, discussed the basis for plastic theory, and how it is applied to actual examples. "Ultimate Strength Design of Concrete" was taken up by Dr. Eivind Hognes-

tad of the Portland Cement Association. Mechanical techniques as an aid to design were covered by Dr. August J. Durelli of Armour Research Foundation, who talked on "Structural Model Analysis," and by Dr. James H. Turnock of International Business Machines Corp., whose subject was "The Potential of Computers in Structural Design Procedures."

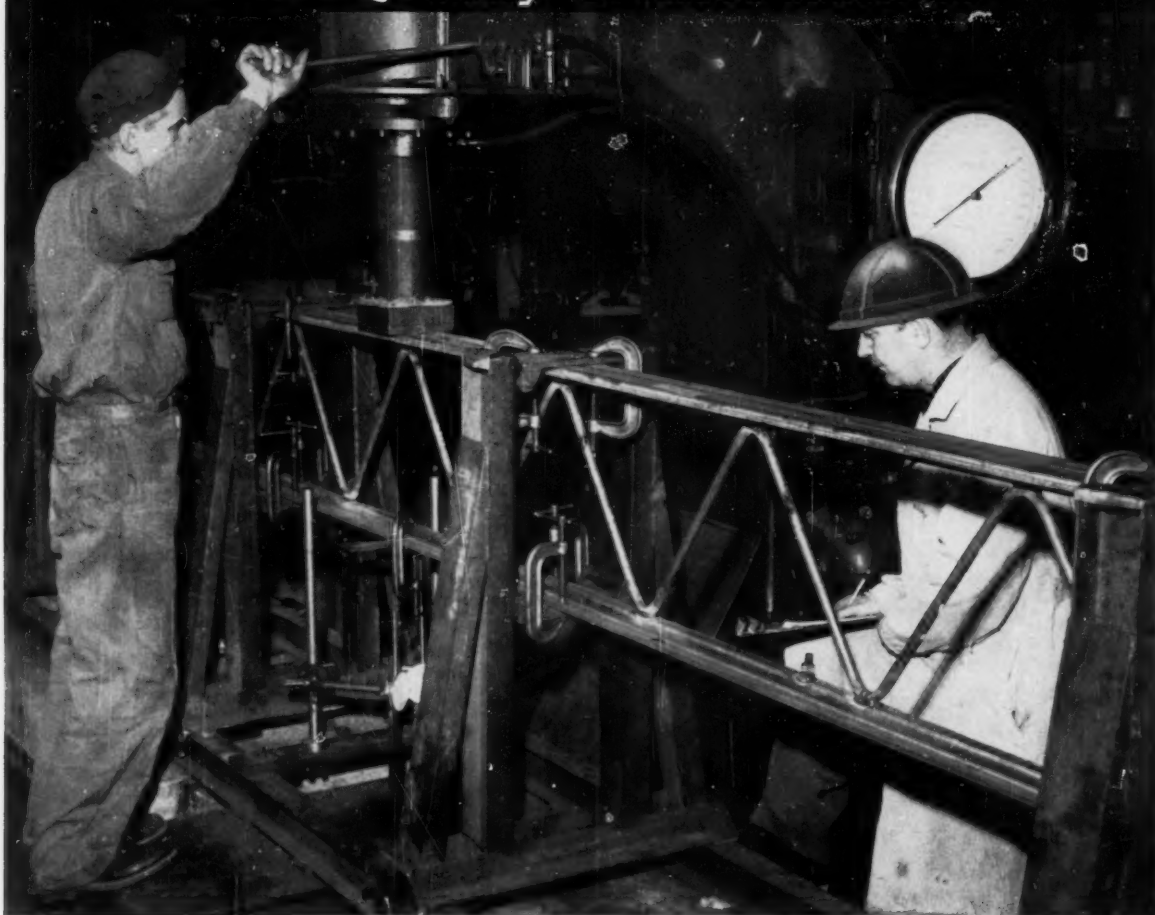
In Session IV, development of the Kaiser dome was described by Robert J. Hume. Michael Gigliotti of Monsanto told how plastics are being used in new structures. "High Speed Computers for Structural Analysis," by Charles W. Zahler of the United States Steel Corp., was the final speech of the session and the program.

Luncheon speakers were Commissioner Joseph P. Wolff, Detroit Department of Buildings and Safety Engineering, and Robert E. Fischer, associate editor of ARCHITECTURAL RECORD.

World Construction Year?

Success of IGY (International Geophysical Year) in regard to both scientific achievement and public relations value apparently has stimulated figures in the building field to think that a "World Construction Year" might be a very good thing. An attempt to get a "World Construction Program" going was made at Northwestern University on December 10 at a conference co-sponsored by the University, A.I.A. and A.S.C.E. and in addition, about 40 host-cooperating organizations from Chicago. (At its last annual

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Meetings and Miscellany

convention A.I.A. had passed a resolution, presented by John Fugard of Chicago, agreeing to be a principal co-sponsor of an exploratory conference on this theme.)

Northwestern, represented by Dean of The Technological Institute, Harold B. Gotaas, was host for the meeting, but prime mover in the whole affair was Howard T. Fisher, peripatetic building researcher and Chicago architect, who has recently held conferences on "3-D Research" and been adviser to the Inter-American Housing Center.

Response to the theme and potential benefits was highly enthusiastic. Considerable concern was expressed, however, concerning the outcome of the venture unless a very carefully thought out program was made available for presentation to the building industry at large, which would receive staunch financial and moral support.

First resolution adopted by the conference was to appoint a committee from among the three co-sponsors who will select approximately 20 key people in the building field to develop a basic program. A second resolution authorized acceptance of voluntary financial contributions to provide a working fund for early operation of the program.

Worth the Winning

The tenth annual program of NATIONAL HONOR AWARDS "for distinguished accomplishment in architecture" has been announced by the American Institute of Architects. Any building in the U. S. or abroad



Engineering Center to be erected at an estimated cost of \$10 million on Manhattan site at United Nations Plaza between 47th and 48th streets is displayed in model of projected scheme by Shreve, Lamb and Harmon Associates by Dr. Mervin J. Kelly, chairman of industry campaign to raise funds for construction, and Walter J. Barrett, president of United Engineering Trustees Inc., builders and operators of the projected headquarters for the engineering profession in U.S.

completed since Jan. 1, 1953 by a registered American architect is eligible. Entry slips are due February 11 at A.I.A. headquarters, 1735 New York Avenue, N.W., Washington 6, D. C. . . . Entries and nominations are invited till March 15 for the 1958 BUILDING PRODUCTS LITERATURE COMPETITION co-sponsored by the A.I.A. and the Producers' Council Inc. Entries may be made by manufacturers, their advertising agencies or manufacturers' associations: query Producers' Council Inc., 2029 K Street, N.W., Washington 6, D. C.; nominations may be made by A.I.A. members or chapters "or others": query A.I.A. Department of Education and Research, 1735 New York Avenue, N.W., Washington 6, D. C. . . . A cash award up to \$2500 is available for the 1958 ARNOLD W. BRUNNER SCHOLARSHIP administered by the Architectural League of New York. All U. S. citizens are eligible to submit, not later than February 15, applications outlining a proposed project relating to architecture or (in their aspects relating to architecture) city planning, crafts, decoration, design, education, engineering, landscape and site planning, painting, photography, sculpture or other design fields represented in the membership of the League. Details are available from the League Office, 115 East 40th Street, New York 16.

I.D.I. Considers the Consumer

Designers who want to succeed had better think hard about the real needs and wants, emotional as well as practical, of "the ultimate of all our competitive efforts—the person who buys." This was the genesis and also the gist of the recent fourth annual design symposium of the Industrial Designers Institute, Southern New England Chapter, at Norwalk, Conn. Vance Packard was there to give his "recapitulation and summary of the forces at work behind the scenes in the Great American Market"; but the theme was sounded by all the speakers in one way or another. Sheldon R. Coons, marketing and sales consultant and former Gimbels executive, remarked as a serious problem the ever diminishing personal contact between manufacturers and stores and their customers. Architect Morris Ketchum Jr., who made a detailed analysis of the evolution of "Our New Shopping Environment," noted that the new type of shopping center brings back the personal contact that used to be over-the-counter selling. And remarked also that "specialty

DESIGN FOR BUILDING WISELY

shops have never been drowned out of business by the department store."

Kentile Film Promotes Architects

A view of the genus *architect* that every architect would be glad to think his clients and prospective clients hold is nicely pervaded in an eight-minute 16-mm. color film produced and distributed by Kentile Inc., manufacturers of resilient tile flooring. The film, called "Design for Building Wisely," follows the experiences of the proverbial young couple in the evolution of their house from talking stage to finished building. Intent of the production, Kentile reports, was "to demonstrate to the consumer the vital role the architect plays in building a home and to secure more assignments for the profession." Available without charge on request to Kentile (58 Second Ave., Brooklyn 15, N. Y.), the film was written and directed by Academy Award winners Eugene Milford and Sidney L. Katz with the technical and editorial assistance of the A.I.A.

Corrections

The RECORD regrets that the name of the late Arthur Brown Jr. was incorrectly given (as Arthur F. Brown Jr.) in the listing of Advisory Architects to the Architect of the Capitol in the story on page 32 of the October issue.

The photograph of the Maybeck interior on page 24 of the November issue of the RECORD, incorrectly identified as the First Church of Christ Scientist, Berkeley, is actually the Faculty Club of the University of California.

The Association for Applied Solar Energy advises that its press release listing winners of the "Living with the Sun" design competition (AR, Nov. 1957, page 10), incorrectly credited the Fifth Prize entry, which was the work of Marvin E. Goody of Hamilton & Goody, Architects, Cambridge, Mass., and Robert J. Pelletier, not of the last-named alone.



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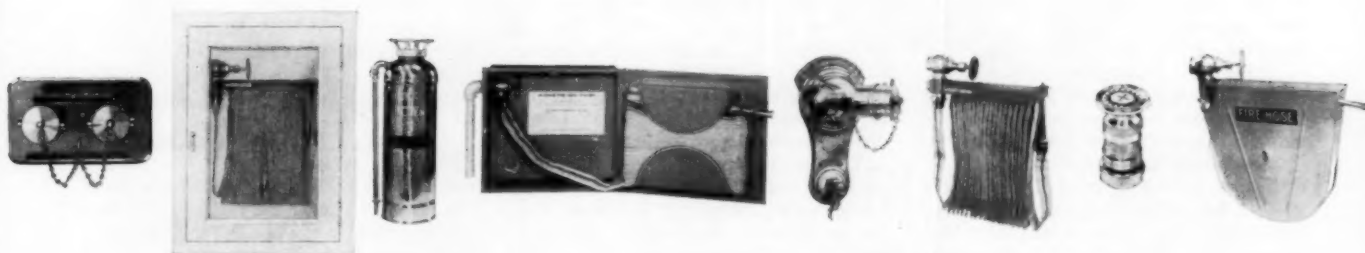
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THE PRODUCERS' COUNCIL: AN OLD FRIEND OF ARCHITECTS IN A NEW ERA

Changing Programs Meet Changing Needs: A Special Report by Ernest Mickel

There are no segments of the construction industry in which producers of building materials do not have a vital interest, but by virtue of the established patterns of building procedure their primary concern is with the architect.

Because of this close alliance, the American Institute of Architects, back in the early 1920's, gave birth to a Producers' Section of its Structural Service Committee. The then stated need was for a better understanding among architects and producers as to their common interests in the characteristics, presentation, and appropriate utilization of the products entering into construction.

Later, in 1929, that committee's Producers' Section was incorporated as a separate organization—The Producers' Council—and the affiliation has remained in effect since.

Today, the objectives of the Council can be spelled out in greater detail, but they are essentially the same. The distinction that really marks the present Council from its predecessor self of the first two decades of its existence is a remarkable adjustment provoked by the pace of technological development in construction.

As a spokesman voiced it recently: "The needs of the entire industry have been changing rapidly, and we had to change with them."

It must be said that the Council's awakening to the new needs of the industry has developed rapidly in recent years and now is manifesting itself in a number of fresh programs directed at answering the clamor for more information—technical information—on builders' products.

As the Council sees it, the information supplied the architect needs a different emphasis now, a "coordinated presentation." Building is more complicated and the materials that go into structures are caught in an accelerated technical development spurred by increasing research. The architect seems to have less time to absorb all that he should know about products and their application. Mar-

kets are more competitive. New materials are being introduced more rapidly.

To meet these needs, Producers Council, Inc., has embarked on a large number of new programs designed to inform architects and others of the day-to-day progress in building materials development.

One of the broadest of these new efforts, as far as public impact is concerned, is the Building America television program series. This is to be shown on public service time weekly in more than 200 marketing areas. Each program will run 30 minutes and is made up of five or five-and-a-half-minute product presentations and one three-minute interview with an outstanding figure in the construction industry. Local dealer tie-in promotion is arranged.

This is perhaps the only industry activity today that directs itself to the general consuming public as well as architects, engineers, builders, dealers, businessmen and civic leaders. The first program series (this month) has as its industry figure Leon Chatelain Jr., president of the American Institute of Architects.

Each of the programs is being developed from material excerpted from members' current or newly prepared promotional films. The series is being presented through the Public Service Network of Princeton, N. J.

Another new P.C. program, the Architectural Sales Representatives Institutes, aims at giving the materials salesman a better understanding of the architect's office. These sales schools will operate for the first time this year, running for five days each and concluding with appropriate graduating ceremonies. The first is being held at Rensselaer Polytechnic Institute, Troy, N. Y., this month.

The instruction at these schools has been designed, the Council explains, to help sales representatives sell products by developing an understanding of the complex problems facing an architect. The training will, it is hoped, enable sales personnel to offer technical and consultant serv-

ices at the time and in the way that will make them of greatest value.

The Institutes will all be at leading universities in conjunction with their architecture departments. Outstanding architects and other industry men will cooperate with the university faculties in serving as instructors.

Also tied to the architectural schools is P.C.'s new visual aids project. Underway for some months, this program is a vital part of the over all educational aim. The Council co-sponsors with the Association of Collegiate Schools of Architecture, furnishing 2-in. by 2-in. slides in sets on a variety of building products. More than 2000 sets, averaging 25 slides each, have so far been sent to the schools.

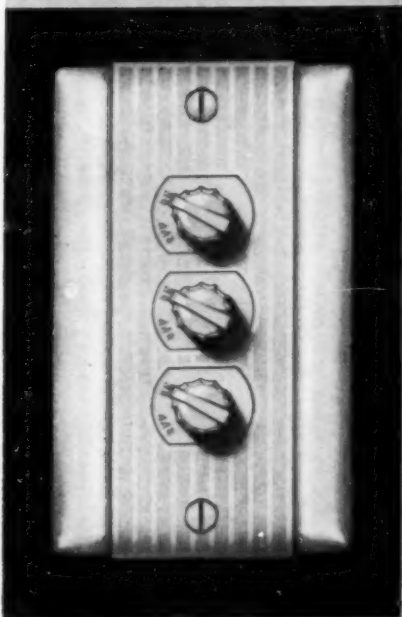
The revival of a specifications information service by the Council's merchandising committee can also be classed as a new activity. P.C. is calling this its Spec-Data Service. It is described as insuring that all practicing architects receive the most up-to-date technical information available from manufacturers. Actually, Spec-Data Service is a reactivation of a technical file published by the Council's *Technical Bulletin* up to and including 1942. The material, to be published in the P.C.'s quarterly *Technical Bulletin*, will be restricted, it was said, to highly technical data required in specification writing.

An example of industry's search for promotional aids—a need to which P.C. remains ever alert—is the home-builders' request of last September. Manufacturers were approached by the builders at the first merchandising conference sponsored by the National Association of Home Builders in San Francisco. As a result, the two organizations are teaming up on a coordinated promotional effort for 1958.

The Council has also been increasing its activities in the area of marketing research. The first major move in this field was made last year when P.C. fostered a comprehensive

continued on page 236

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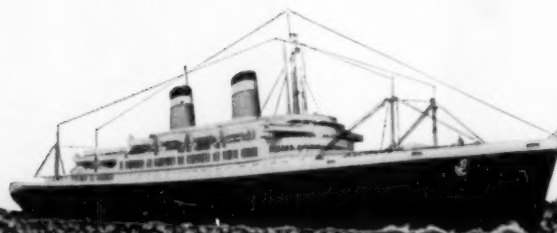


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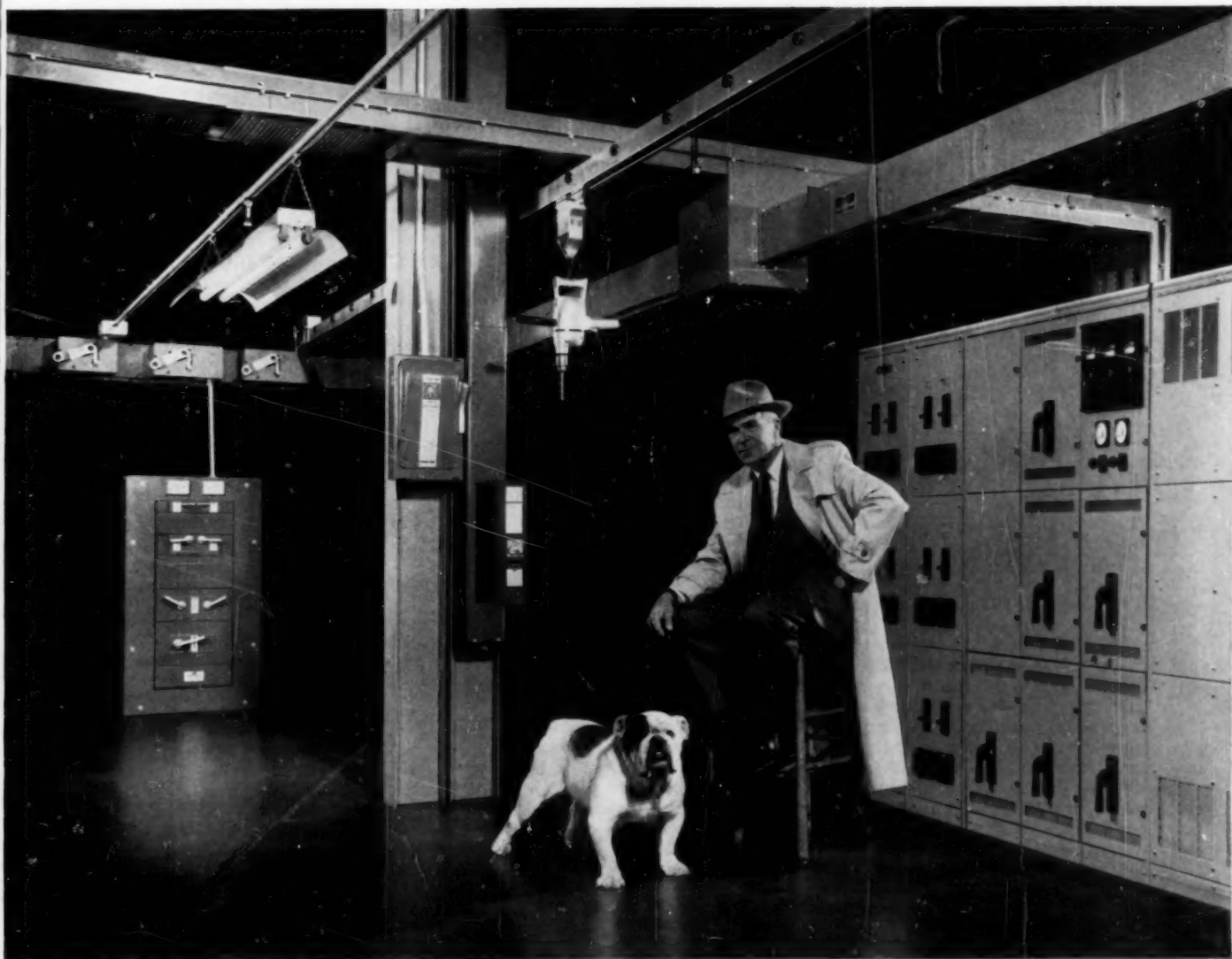
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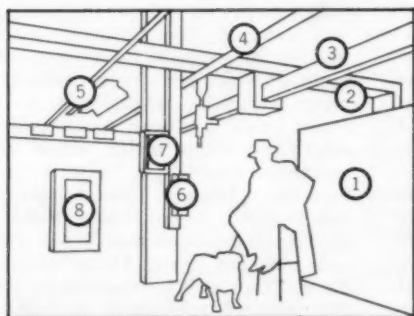
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REPORT OFFERS A NEW FRAMEWORK FOR PLANNING IN THE NATION'S CAPITAL

Proposals by Architect Louis Justement Would Offer Substitute for Present "Planning by Committee"; American Institute of Architects Board of Directors Votes Its Enthusiastic Approval of the Report

"A Framework for Planning the Nation's Capital" is the title of a new comprehensive report drafted by Architect Louis Justement, A.I.A., and enthusiastically approved by the Board of Directors of the American Institute of Architects at its November meeting in Phoenix, Arizona.

Actually what is proposed is abandonment of coordination through conferences and committees. Mr. Justement says: "We would secure the coordination through the establishment of a basic framework within which planning could proceed efficiently; and, paradoxically, we would find that, far from having restricted the individual planner, we would have liberated him. For nothing is more deadening for the creative spirit than to work on the basis of uncertainty, delay, frustration, impotence—and committees. Within a given framework of established conditions, but with genuine freedom within that framework, the planner will have many opportunities for creative planning."

How people are as conversant with the architectural needs of the Federal City and its environs as is Mr. Justement. For more than a decade he has studied the planning problem in great detail and has written extensively on this much-argued subject. His views culminate in the present report, a five-page document that is certain to pinpoint new problems and pose important new questions in the continuing debates.

The report calls for a new approach to Capital planning. Whereas the A.I.A. moved into the planning controversy of 50 years ago and helped to save L'Enfant's Mall concept, the problems differ today, Mr. Justement notes. He believes an entirely new procedure for planning is required.

The general solution to current planning problems as presented in the Justement report lies in creation of an organization with the power to plan, finance and construct for

the entire metropolitan area but to do so for carefully limited purposes agreed to by the several political jurisdictions. A specific portion would be Congressional creation of a Federal City Corporation with power to plan, construct, finance and control a rapid transit system. The plan envisions Federal government grants for such a corporation involving the major part of funds now authorized for highway construction in the District of Columbia.

Favoring the mass-transit solution, the framework for planning suggests that a choice should be made between an all-automobile city with the present type of bus transportation, or some form of rapid transit which provides fast and convenient travel through grade crossing elimination.

These advantages of the mass-transit solution were presented: "It will help to preserve the essential character of our present National Capital. For mass-transit can go underground within the central city and leave aboveground unchanged except as we deliberately choose to make changes.

"Whereas the all-automobile solution, if it is to reach and serve the central area, will necessitate such vast changes in the form of freeways, underpasses, cloverleafs and automobile parking areas that much of the charm of the present city will be lost. In the last half of the 19th century we nearly spoiled the plan of Washington by the reckless use of railroads; we are now in danger of spoiling our city by an almost equally reckless use of automobiles."

Tangent values from a rapid transit system would accrue to business, real estate and the Federal government, the report argues, and these values would equal or surpass those going to the transit riders.

The report would have the Federal City Corporation do the basic planning research required to locate the transit lines and to plan the bridges, tunnels, highways and terminals re-

lated to the transit system; but it would have no other planning authority. Metropolitan planning would thus be severely limited in scope but extremely effective within the limitations, it is believed. The Corporation could constitute a framework within which the National Capital Planning Commission and the various county planning commissions could function more efficiently than at present. Why? Because an overall pattern of the city would have been established.

The operation of a rapid transit system would be left to private enterprise, but its construction must be a governmental or semi-governmental enterprise.

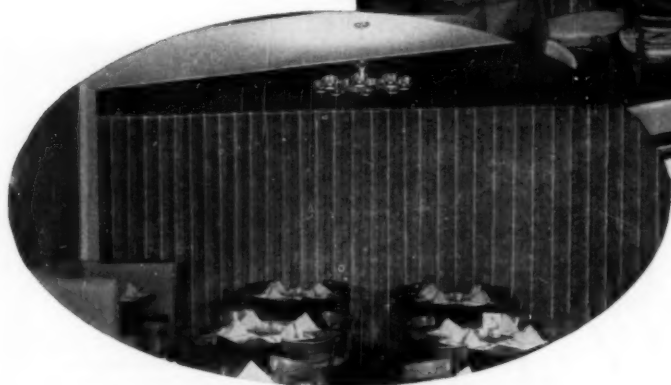
The report is strong in its support of a rapid transit system as a preferable means of traffic movement. It states, for example, that the restriction of metropolitan planning to the basic subject of mass transit may be found to have many advantages. A great deal of the irritation, indecision, confusion and delay caused by the present planning procedure is held to result from an excessive effort to coordinate and correlate all of the many facets of the planning process.

It's explained this way: "Each of the planning commissions, within its own geographic jurisdiction, attempts to plan for and to coordinate many separate activities such as street and highway construction, sewer and water mains, school and recreation facilities, zoning and land-use, bridges, redevelopment, subdivisions, housing, etc. But the city planner cannot coordinate without adequate power to enforce his plans. The result is planning by conference and committee instead of creative and imaginative planning by individuals."

The proposed plan would work as follows: the Federal City Corporation would establish a basic framework for planning at the top. The various commissions would operate at the level of the present NCP.

continued on page 252

*Room-Divider is entirely
Masland Duran with hand-
some effect on both sides.*



MAGNA-FOLD Door
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For Room-dividers, too . . .

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Versatile and practical! That describes Masland Duran. Not only does this handsome vinyl provide distinctive upholstery beauty; it is also practical and decorative on just about any flat surface. Masland Duran Room-Dividers, for instance, are easy to keep clean with soap and water—making even the lightest colors practical for new interior effects. Your own imagination will suggest many more uses. Write for folder with samples. The Masland Duraleather Company, Dept. 36, Philadelphia 34, Pa.

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INSTALL WITHOUT PAINTING! Steel windows finished with Truscon Supercoat Process need no painting when installed. Maintenance painting won't be needed for many years. Exhaustive tests prove it.



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No need now to sacrifice strength and

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Supercoat Process can be furnished *now* on specification in factory shipment on all Truscon Steel Windows for commercial, institutional, and industrial construction. Standard color is a handsome light gray.

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A LOOK AT CURRENT ARCHITECTURE IN BRITISH COLUMBIA

The fledgling steps taken before the war by Canada's West Coast architects have become giant strides in achieving what is undoubtedly our most indigenous form of contemporary architecture. Most of British Columbia's new buildings show a healthy respect for the value of the construction dollar despite the fresh and imaginative approach displayed. They do not seek the spectacular for its own sake—novelty in violation of established precepts of logic and es-

thetics—but nevertheless conform to the tempo of today. Functional planning and original use of native materials are fused in solving current building problems with "commodity, firmness and delight." Influence of U. S. West Coast design, though potent, is diminishing as B. C. architects evolve a vocabulary of expression all their own. On this and following pages are examples of some of the work being done in various parts of the province.



Selwyn Pullan 1



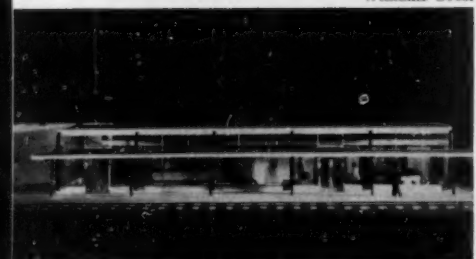
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Williams Bros. 3

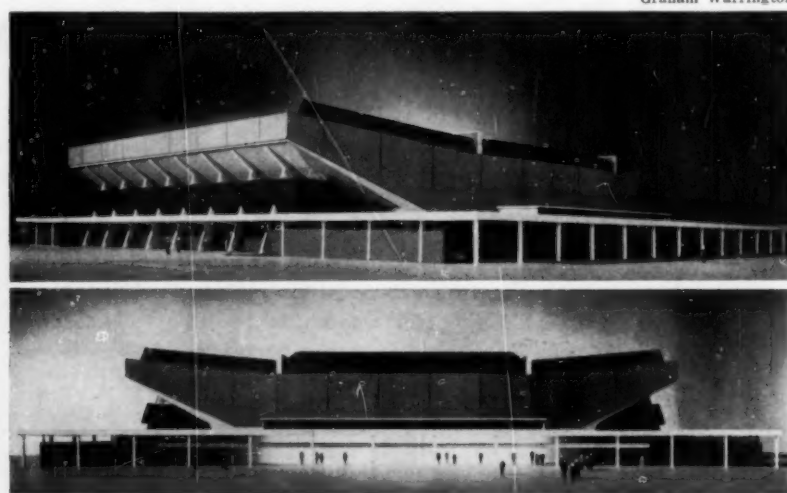


4



5

Williams Bros.



Coliseum for Pacific National Exhibition at Vancouver; William K. Noppe, Architect. The main structure is of reinforced concrete and the roof structure is of structural steel. The two main trusses are of the bowstring type so that the entire roof structure is supported on four columns in the center, and on the cantilever bents on the outside edges. The outside walls of the upper section were to be precast concrete panels, and the lower section concrete masonry. Total seating capacity is 13,000

1. Martin Paper Products Factory, Vancouver; Gardiner, Thornton, Gathe & Associates, Architects. The plant produces corrugated cardboard from raw cardboard and from this a variety of boxes and containers. It is constructed of light steel framing with infill panels of rough cedar boarding, concrete block, or glass fiber sheeting, in the plant area, and rough cedar boarding and colored asbestos sheeting in the administration wing. Its plan is dictated by requirements of future expansion in every department

2. Radio Station CKWX, Vancouver; Thompson, Berwick & Pratt, Architects. This building of reinforced concrete houses the offices and studios of a local radio station. Soundproof studios and equipment rooms are contained in solid center portion. Surrounding this center mass at a lower and more intimate level, and separated from it by a skylighted corridor, are the general offices. Exterior walls of the center studio mass are faced with glass mosaic tile. Exterior office walls are rendered concrete, glass and aluminum sash. Total cost: \$290,000

3. Union Headquarters, Local 1357, I.W.A., New Westminster; Allen C. Smith and Associates, Architects

4. Arts Building, University of British Columbia, Vancouver; Thompson, Berwick & Pratt, Architects. Court looks toward view to the north. Lecture halls and student lounges on the west, classroom block on the south and faculty offices on the east. Classroom block is raised on columns for open arcade to large court beyond. Court is built of colored concrete slabs and contains seating, garden areas and large reflecting pool. Total cost: approximately \$1,675,000

5. North Vancouver Station, Pacific Great Eastern Railway, North Vancouver; Hale & Harrison, Architects. The building, designed for future expansion, has a concourse 22 ft by 80 ft, with a large glass expanse to the skyline of Vancouver. The structural frame is steel; lavatories, kitchen and office frame with brick veneer; floors terrazzo throughout; ceilings acoustic plaster. The station was designed so trains could be viewed from within

Graham Warrington

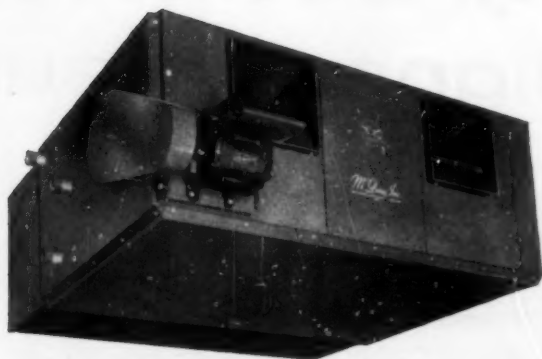
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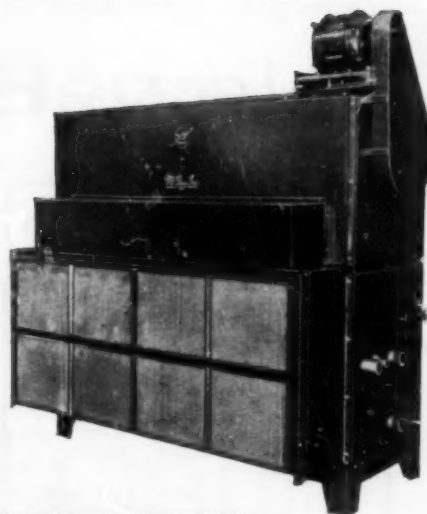
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UNIT DIMENSION	ROUGH OPENING	BASIC UNIT SIZE	SASH OPENING	GLASS SIZE
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3-10 1/4"	3-8 1/2"	3-7 1/4"	3-5"	39 1/2"
4-10 1/4"	4-8 1/2"	4-7 1/4"	4-4 1/4"	49"
5-10 1/4"	5-8 1/2"	5-7 1/4"	5-5 1/4"	59"

3-5 1/4" 3-4" 3-3 1/4" 3-0 1/4" 18" 232	3-10 1/4" 3-8 1/2" 3-7 1/4" 3-5" 39 1/2" 3832
4-1 1/4" 4-0" 3-11 1/4" 3-8 1/4" 18" 240	4-10 1/4" 4-8 1/2" 4-7 1/4" 4-4 1/4" 30" 3840
4-9 1/4" 4-8 1/4" 4-7 1/4" 4-4 1/4" 18" 248	5-10 1/4" 5-8 1/2" 5-7 1/4" 5-5 1/4" 49" 3863



In split level homes, new Beauty-Line Windows blend perfectly to match architectural design—no matter what elevation you're planning.



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Ideal for kitchens! 3'3" Beauty-Line Unit makes perfect kitchen window, easy to operate over kitchen sink. Also serves as excellent privacy window for bedrooms.



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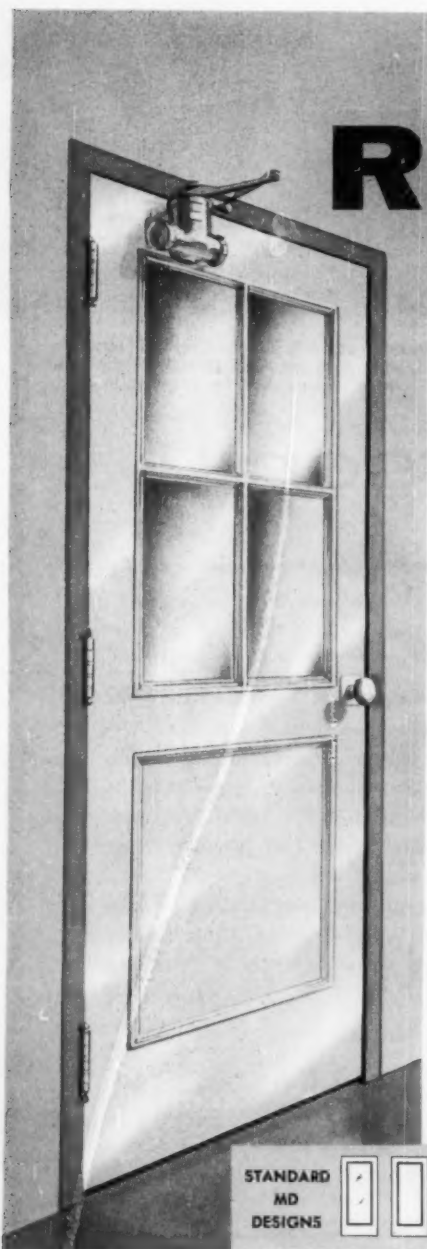
1958 Building Outlook Viewed As Very Good "Overall"

Qualified optimism is perhaps the best description for Royal Architectural Institute of Canada President Douglas E. Kertland's view of the building outlook for 1958.

"Total value of contract awards at the end of the first 10 months of 1957 was \$500,000 below the figure for the same period in 1956," he says, "but this decline was not a great surprise. Industrial, engineering and residential building were exception-



Warehouse and offices for Harold F. Ritchie & Co., Vancouver; Thompson, Berwick & Pratt, Architects. Cost: \$245,000
Williams Bros.



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STANDARD
MD
DESIGNS



Proposed apartment building for S. Gaylie Construction Ltd., Vancouver; Toby & Russell, Architects

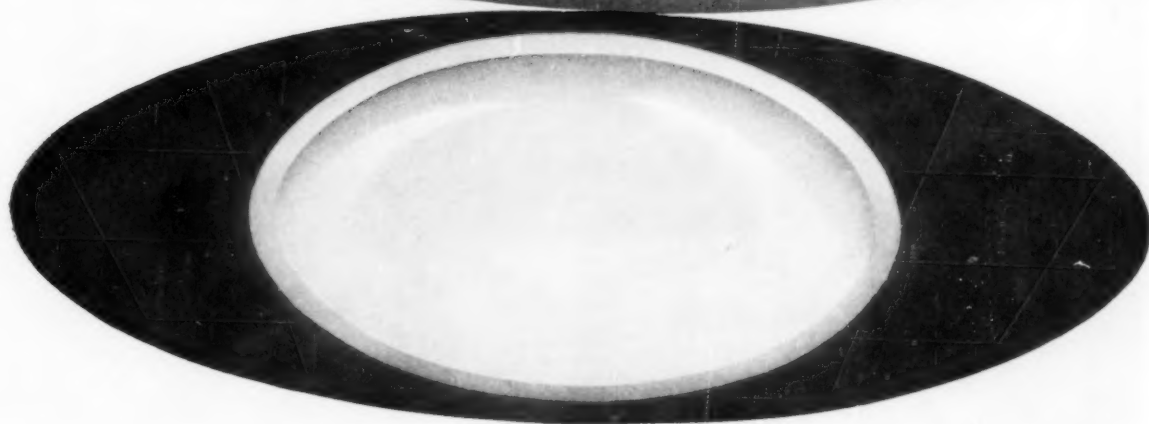
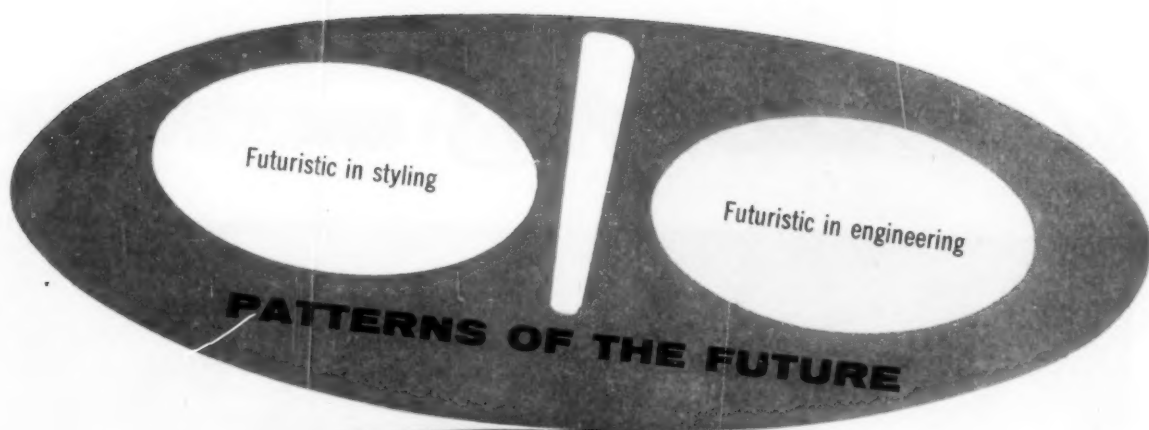
ally active in 1956, and these categories have suffered the most severe setbacks. Commercial construction registered a gain, on the other hand, reflecting earlier activity in the industrial and engineering building."

Mr. Kertland believes that the danger of inflation has been checked, and relaxation of the Federal government's "tight money" policy is in order. He cited the recent reduction in the interest rate on loans made by the Industrial Development Bank, from six and a half to six per cent, as an example.

While the long postwar boom may be over, at least for the present and perhaps for the next six months, there is no cause for alarm, according to the R.A.I.C. president. "Overall business activity is continuing at a high level," he points out. "What is being established is a plateau of economic stability from which we will progress to greater heights than ever before."

Planners Told They Fail to Meet Many Needs of Modern City

A stiff dose of frankness enlivened the annual conference of the Community Planning Association in Canada, held in Vancouver September 29-October 2.



... heralded by these handsome "large area," recessed, 4-foot in diameter, circular Visionaires: the SP3840 series. Besides widening the architectural-designer's range of dramatic concepts in interior designs, the SP3840 is ideal either as a contrast fixture or the dominant shape in the ceiling theme. Matte-finish translucent white Plexiglas affords distinctive illumination: unusual low brightness, minimum glare and greater visual comfort. Diffusers are concave for added strength and structural stability. Fixture-body is square for easy installation. Loosening of only 4 screws permits fully framed diffuser to be lowered on concealed slotted hinges for relamping without removal. Bonderite treated against corrosion and finished in high reflectance, all white baked enamel. Also available 24" and 36" in diameter. Write for bulletin D-49.



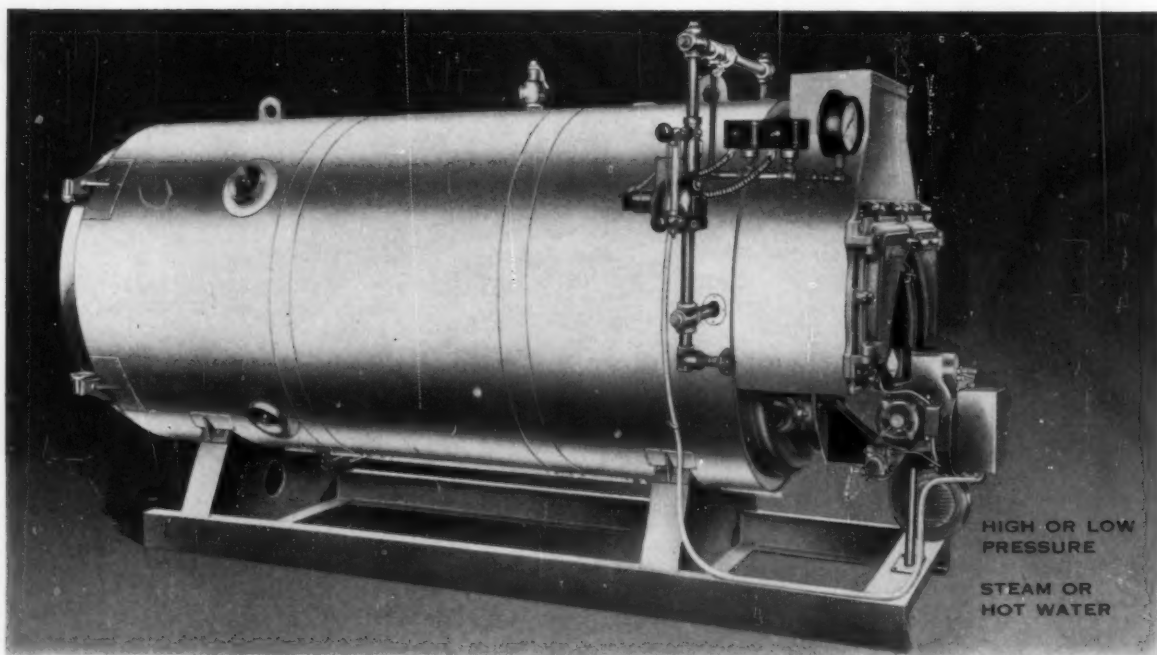
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In the new Kewanee-Iron Fireman series of package units, the important advantages of forced draft firing are extended to the small "Scottie, Jr." sizes. Thoroughly proved in worldwide installations of larger size units, this new series makes forced draft firing, with all its benefits, available for smaller boiler plants.

Forced draft advantages. Forced draft firing has many inherent advantages over other methods of gas or oil combustion.

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is much quieter than a natural or induced draft unit. No high stack needed; requires only a vent pipe.

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Only service connections required. All boiler fittings, automatic burner controls, fuel and air systems are installed and tested at factory. Units are fire tested and shipped as a unit if desired, or boiler and burner may be shipped separately if it is necessary to protect the burner from weather or vandalism during construction.

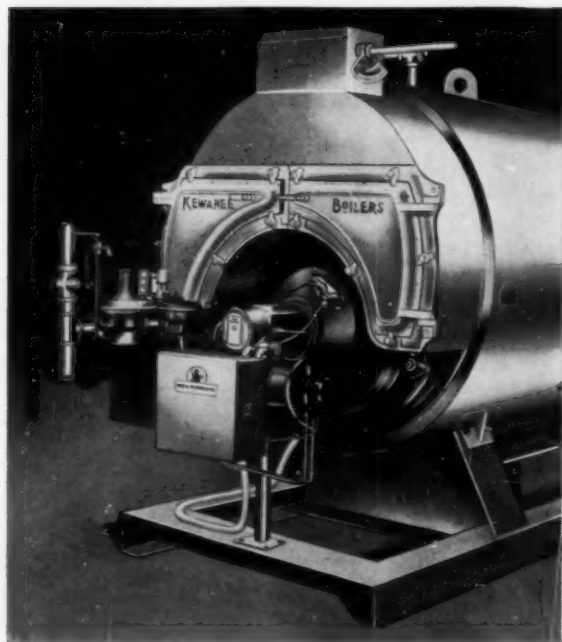
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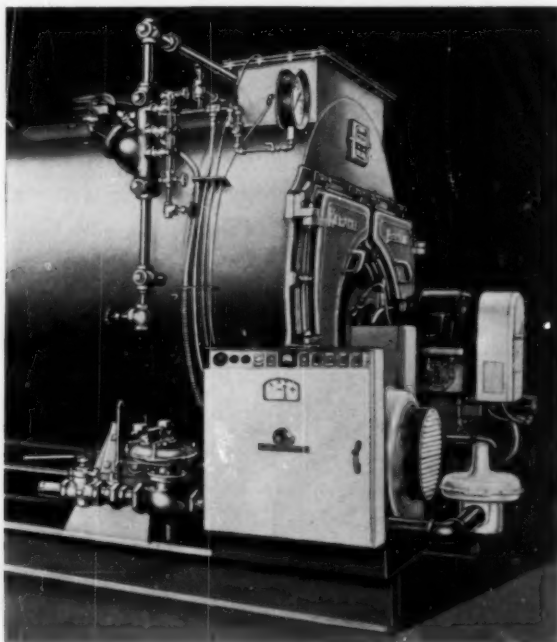
Light oil, gas or gas-oil. The Iron Fireman WhirlBlast burner is a new and advanced design. Its most outstanding feature is its ability to fire, with high efficiency, either gas or oil in a sealed combustion chamber, without flame pulsation. It is a true forced draft burner operating under firebox pressure. On dual fuel models, fuels are changed without mechanical adjustment, either through automatic controls or with the flick of a switch. From 18 to 92 bhp.

Heavy oil burner for smaller boilers. The ability to fire either heavy or light oils and to modulate over a wide range are the two outstanding features that make the MicroMist burner unique in its field. Its most notable feature is a two-stage supercharger atomizing principle which converts fuel oils, up to and including No. 5, to an air-oil mist that is readily ignited by an electric spark. No gas pilot required. For boilers from 18 to 92 bhp.

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Iron Fireman WhirlBlast burner (described above) fires either gas or light oil, or combination oil and gas, under forced draft. This is a new Iron Fireman development; never before available in the medium size range.



The Iron Fireman rotary forced draft burner (described above) fires any grade of oil, gas or gas-oil combination. It includes control panel, air and fuel systems. Control instruments are wired and tested at factory.



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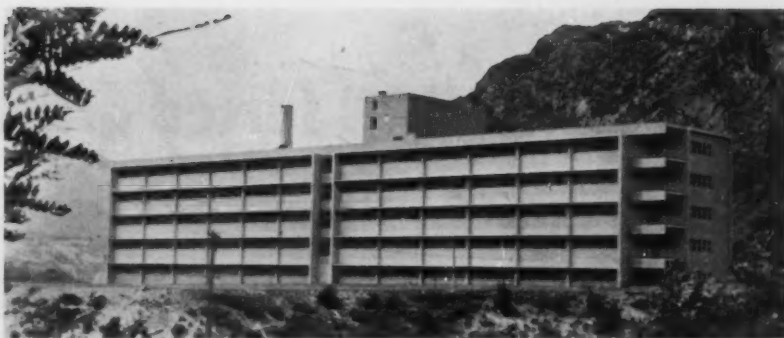
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George S. Mooney, executive director of the Canadian Federation of Mayors and Municipalities, Montreal, told the nation's planners that they had failed miserably to meet many of the needs of the modern city. He added that control of the "explosive" growth of Canadian cities requires bold imagination, and at present they are examples of an uneven advance.

Eric Beecroft, executive director of the C.P.A.C., suggested that, to be effective, urban planning must be undertaken at the metropolitan level. Furthermore, he added, cities and



Another Thompson, Berwick & Pratt project—150-bed hospital for mining city of Trail, B. C. Cost: \$2,000,000

Graham Warrington

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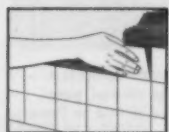
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surrounding municipalities wishing to avoid the costly and unsightly consequences of "sprawl" should have closer cooperation and assistance from their provincial governments.

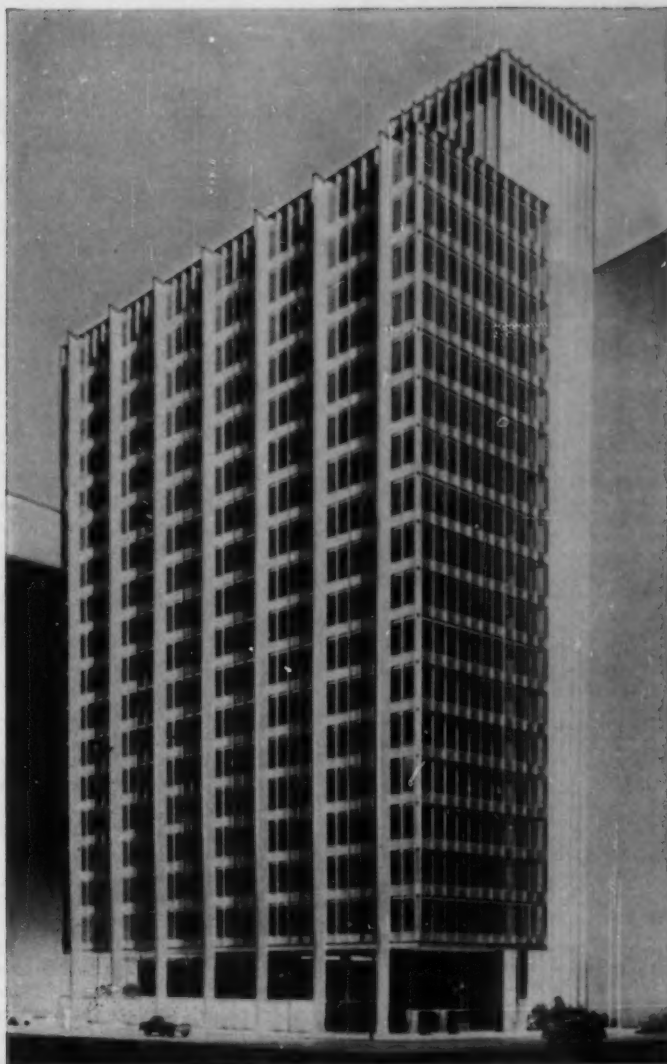
These governments must assume a "great deal more leadership," especially in the field of setting up planning machinery and authority, Mr. Beecroft noted, is that families moving into fringe areas must accept their guidance—or accept the consequences.

Consequences of allowing haphazard development to continue are not, he said, pleasant to contemplate. They present a picture of crushing financial burden on the relatively few taxpayers in areas of scattered population who must pay for the construction of miles of roads, sewers, water mains, power lines and other services; of choked, congested roads and bridges; and of the dreary ugliness that inevitably follows a piecemeal development.

The anomaly of the situation, Mr. Beecroft asserted. And, he warned, families moving into fringe areas soon encounter the very inconveniences they left central areas to escape.

Slum clearance, with its accompanying rehabilitation of families, emphasizes the problem. Since many of these families have to be relocated in neighboring municipalities, it also underlines the need for overall metropolitan planning.

"Very often," said Mr. Beecroft,



CHICAGO'S NEW INLAND STEEL BUILDING (Photo by Hube Henry, Hedrich-Blessing)
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News from Canada

"the organized city is dealing with a problem that really stems from one neighboring community."

He believes that while remarkable progress has been made in planning at the community level during the past 10 years, the next decade will see emphasis on the province.

The Ontario government started the trend when it literally forced the "metropolitanization" of Toronto and its surrounding municipalities. In Alberta, the provincial government provides a planning service available to all towns. Manitoba is expanding its Winnipeg planning staff to render assistance to other communities.

C. E. Campeau of Montreal was elected president of the Association. Other officers elected: vice-presidents—Eric W. Thrift, Winnipeg, and George L. MacDonald, Toronto; councillors—J. Roland Bedard, Quebec City, J. S. Hodgson, Ottawa, and W. T. Lane, Richmond, B. C.

Convinced The Architect Is Worthy of His Hire

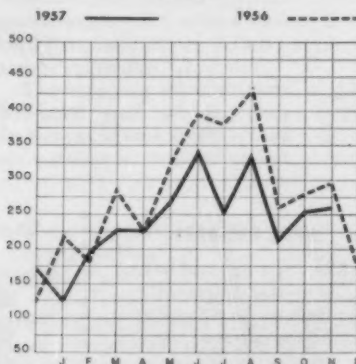
The Board of Education, Township of North York—a Metropolitan Toronto municipality—has rejected a proposal that the board set up its own architectural department.

It was claimed that having staff architects would reduce the present bill for architectural fees, which amounts to about \$500,000 annually.

"But would it?" one of the trustees is reported to have asked. "There are other boards of education that have their own architectural departments and their schools are not as good as ours. We're getting value for our dollars because of the competition among architects in private practice."

Contracts Awarded: Comparative Figures*

(in \$ million)



*Compiled by the Editor and staff of The Building Reporter, from information collected by Maclean Building Reports

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New Office Set up to Strengthen U. S. Construction Statistics

A new importance has been given to construction statistics in the Federal government operation and it is hoped that in the light of significant changes in the Department of Commerce handling of the program Congress can be persuaded to appropriate more money for activities in fiscal 1959.

Principal evidence of the new emphasis was announcement that the Office of Construction Statistics in

the Business and Defense Services Administration (Department of Commerce) had been created to succeed what formerly was the Construction Statistics and Economics Branch in BDSA's Building Materials and Construction Division. The announcement was made by H. B. McCoy, administrator of BDSA, who said Walter W. Schneider would continue to head the operation with the new title of Director of the Office of Construction Statistics. The decision to make Mr. Schneider responsible directly to Mr. McCoy, in-

stead of through longer BDSA channels, reportedly was made with the enthusiastic approval of Commerce Secretary Sinclair Weeks.

In telling of the new administration office, Mr. McCoy said, "The vital need for expanding the statistical work in an area which now accounts for more than 15 per cent of Gross National Product has created the necessity for the new office."

The new office becomes the focal point in the Department of Commerce for planning, developing, and conducting the fact-finding activities on major aspects of the construction industry—volume, costs, materials, production and consumption. Mr. Schneider now has available to him all the facilities of the Department of Commerce that might be helpful in carrying out this assignment. Particularly important are the elaborate electronic tabulation facilities and comprehensive field organization of the Bureau of the Census. Valuable as well will be the basic information on progress of the new multi-billion dollar highway program. (Both Census and the Bureau of Public Roads are integral agencies of the Department of Commerce.)

It was noted that the new office will spearhead the development of a new program to produce more accurate and timely construction statistics as a direct service to meet market research needs of the business community.

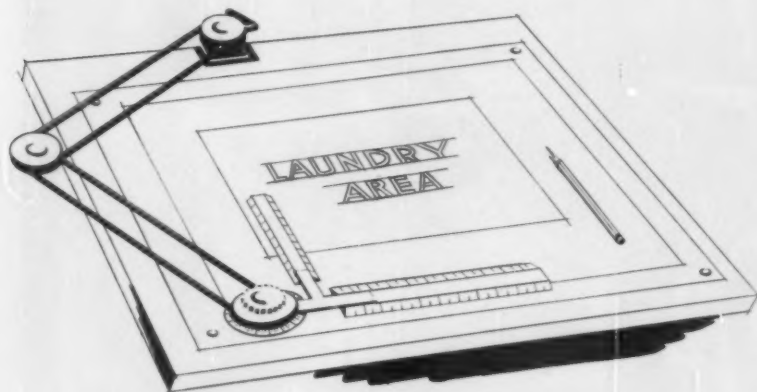
There was new confidence that Congress would increase appropriations for this operation substantially after a number of past turn-downs.

Research and Education Stressed For Clay Products Promotion

The 19th annual convention of the Structural Clay Products Institute, held at the Greenbrier, White Sulphur Springs, W. Va., in November, gave long consideration to the market threat posed by increasing use of light metals and glass and determined that the organization's own research activity at Geneva, Ill., should be continued with greater vigor.

The 700 delegates watched movies of the research activities, including work on the new SCR building panel and its incorporation in a full-scale house. The development of the brick panel at the Geneva headquarters of the Structural Clay Products Research Foundation covered several years of experimental work, and studies there will continue to work out problems of economical production. The industry looks forward to future application of the panel prin-

continued on page 260



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EDITOR: Elisabeth Kendall Thompson, A.I.A.
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Who Cares About Creative Design?

Sometimes the hardest thing to do is the thing which should be most natural to do. This is particularly true when it comes to the matter of a creative art—such as architecture—discussing the nature of creative design, something which is native to it and should be natural for it to discuss. But it isn't. For the plain fact is that architecture is not just reticent about discussing in public its most precious attribute; at times it is so well masked that it forgets its own true nature.

And yet, who can better discuss the nature of creative design than a specific art? Who should sponsor such a discussion but the "mother of the arts"? But who has done this?

Strangely, not architecture but the U.S. Navy. Through its Bureau of Yards and Docks, it recently held a three-day symposium at the Construction Battalion Center at Port Hueneme, Calif., on "Construction Cost Reduction through *Creative Design and Engineering*." The italics are the Navy's. Throughout the symposium the emphasis was never lifted from that particular aspect of construction.

The Navy needs economical buildings, but what client does not also want his building economical? What distinguishes the Navy in its quest for economy is the conviction—which led to this symposium—that the solution to its problem could only be obtained through *greater* creativity; that a more imaginative use of the materials and methods we have today is essential if we are to use them to their fullest potential; and that frank and honest exploration of all aspects of the design and construction process must take place before the ways and means to greater creative achievement can be found.

This probing into the reasons for the dearth of creative design and economy of construction need not—in fact, should not be—confined to the Navy's building program alone. We like to think of architecture as the leader of the building field. But if it is to assume that position it will have to take some courageous steps, and the first of these most certainly is the analysis of its deficiencies. Socrates' "Know thyself" applies as well to faults as to virtues. Only by knowing the full facts can we know how and where we have failed to meet the goal which is implicit in any creative art. Only then can we fairly appraise our accomplishments.

And only thus can architecture command the respect that is due it as a profession. Only thus can it be a leader.

E. K. T.



Wood Trusses, Glass Walls Enclose Portland's New E-R Center

A transparent wall of glare-reducing glass, hung from a roof structure of wood, will enclose the arena bowl of Portland's Exposition-Recreation Center and will exploit the "sense of glamor and spectacle" inherent—but usually ignored in architectural interpretation—in the sport and cultural events it is designed to house. The Center is to be located on a large plot on the East bank of the Willamette River between the Broadway and Steel bridges where ample parking space (for 2500 cars) as well as a dramatic site for the buildings could be obtained. Construction is to start this spring.

Four concrete columns, each 64 ft high, placed 45 ft inside the exterior walls, support the roof structure—a delta system of laminated wood plate girders carried on two laminated jack trusses. This solution to the problem—to span the 360 sq ft building with a wood truss structure—was one of 20 studies made; among the proposed solutions were domes of timber, steel and concrete; an inverted dome of prestressed concrete; trusses in steel and timber; wood rigid frames; and parallel and bow-string trusses. Cost, expression of function and appropriateness to the Northwest determined choice.

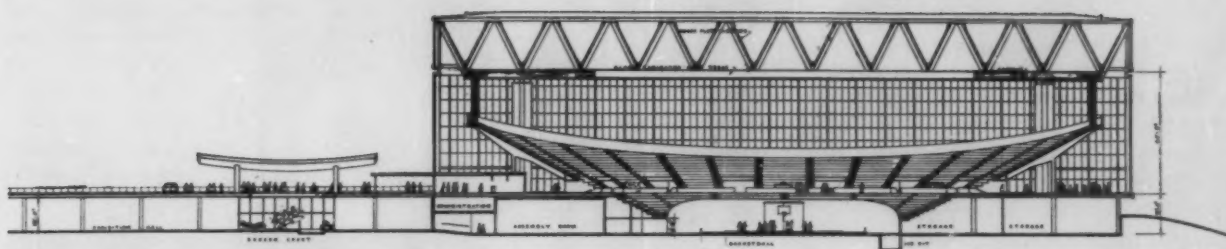




*Skidmore, Owings & Merrill
Architects*

*Moffat, Nichol & Taylor
Consulting Engineers*

Concrete arena bowl, independent of enclosing structure, is 330 ft in diameter, seats from 8566 to 13,700. Floor level of bowl is below grade and on level with adjoining exhibit hall and service facilities. Bowl can be used for large conventions, livestock shows, circuses, ice shows and sports, concert, operatic and theatrical events; smaller meeting rooms will accommodate groups from 75 to 938. Canopy of curved wood (opposite page) shelters main entrance to arena



Memorial court opening off proposed Memorial Room would be a sunken garden between arena (left) and exhibit hall (right) buildings, and could be viewed from main approach to arena on level above. Work of sculpture by Northwest artist (not yet selected) will be placed in court. Exhibit building provides covered parking



Roberts

AWARD OF HONOR: First Presbyterian Church chapel and church school, Boulder, Colo. Hobart Wagener, architect

AWARD OF MERIT: Casey Junior High gymnasium and cafeteria, Boulder, Colo. Hobart Wagener, architect



Roberts

Honor Awards: Western Mountain Region, A.I.A.

A feature of the annual Western Mountain region conference is the honor awards program for architects in the five states (Arizona, Colorado, New Mexico, Utah and Wyoming) which comprise the region—the only such program held on a regional basis in the 11 Western States.

This year's program gave one honor and four merit awards—all to Colorado architects, with four awards for buildings in Boulder, three of which were designed by one architect. All entries were on display during the conference at Jackson Lake Lodge, Moran, Wyoming.



Wayne Wright

AWARD OF MERIT: Mercantile Bank, Boulder, Colo. Hobart Wagener, architect

AWARD OF MERIT: Colorado Insurance Group Building, Boulder, Colo. James M. Hunter, architect



Wayne Wright



Betty Baldwin

AWARD OF MERIT: Merino Elementary School, Merino, Colo. William C. Muchow and Murrin & Kasch, associated architects



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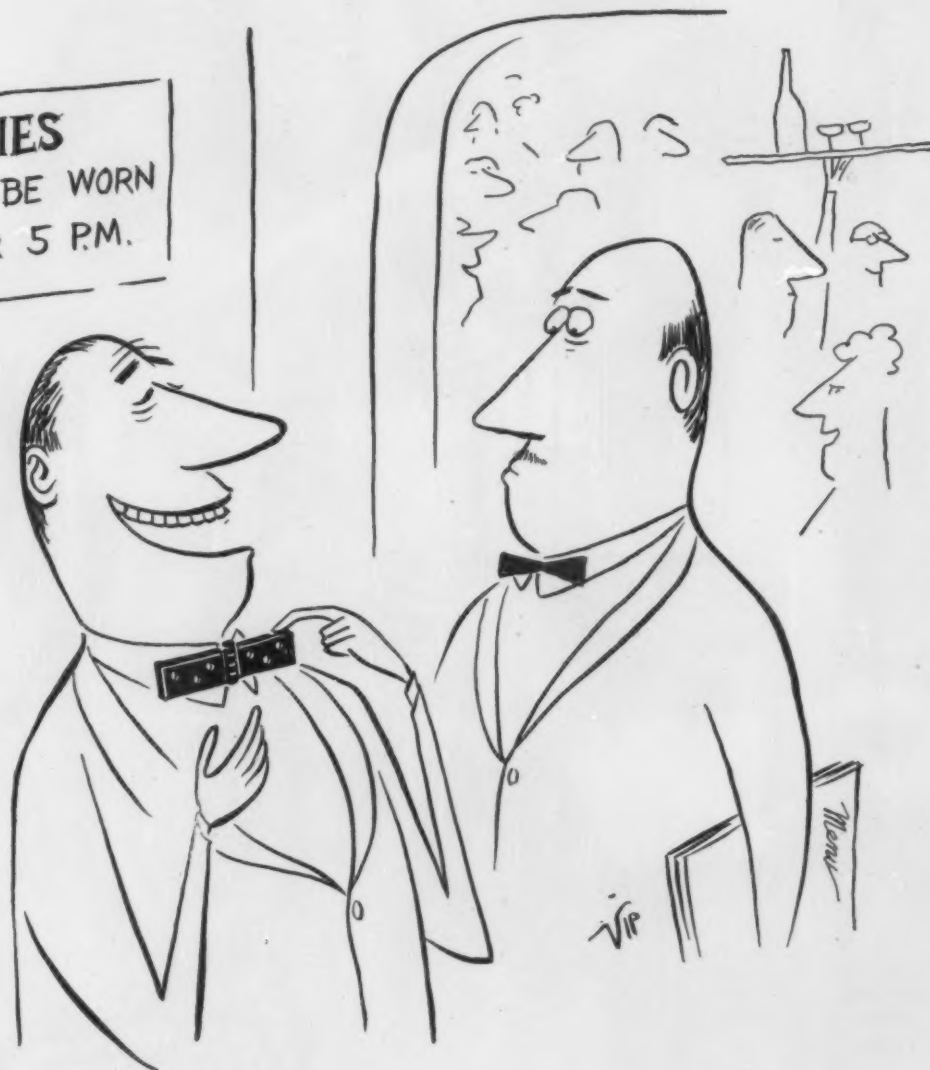
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Architects, builders, and building owners the country over are using WeberWall partitioning systems. They know that WeberWall will give expression to their individual tastes, while providing flexibility to easily accommodate future changes. If you are planning new offices contact WeberWall for complete details.

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Waste Space

Come Feast With Me

In the fall of the year, so many things are said at so many conventions and conferences that it is impossible to report both newsworthy doings at these meetings and the memorable sayings of the profession's wise men. And yet some of the things that have been said are too good only to have been heard by the audience to whom they were spoken. So here are tidbits from the bountiful banquet spread this fall.

BUCKMINSTER FULLER: Building is always anti-priority: it never gets the benefit of new things. . . . We must look at ourselves severely: we must make a total survey of all the factors of our environment and see if we have a *legitimate magnitude*.

GARDNER DAILEY: Intrigue in a building is the quality that makes us want to know what's going on behind. There's no intrigue to a plate glass window.

FRANCIS JOSEPH MCCARTHY: We have to ask ourselves: Are cities for machines or for people? You start from there. There are elements of urban design with which the architect should be involved. Street furniture, for instance: street lights, benches, drinking fountains, signs, newsstands, trash cans. A house of poor design can still have an overall pleasant effect of good design if its furniture is tastefully selected and disposed. Cities are like that.

JOSE LUIS SERT: There's a real analogy between the buildings an architect puts into cities and the cars that Detroit designs to put into our parking lots. The same conflict exists: Detroit designs cars without regard to the length of the parking space; architects design buildings without regard to the environment of which they must be a part. . . . The architect's role is to put order, scale, harmony, proportion, where these are not. He must project himself into things which are not perhaps strictly architecture, but are a part of the total environment. Right now the hand of the architect is decreasingly apparent in these fields.

HENRY HILL: The public uses the phrase "idealistic architect" as a term of scorn, as a weapon. It should be using it as a magnificent compliment which we would be proud to have accorded us. Instead, we are ashamed of being "idealistic architects." If we want the public's respect, we must deserve it. E. K. T.



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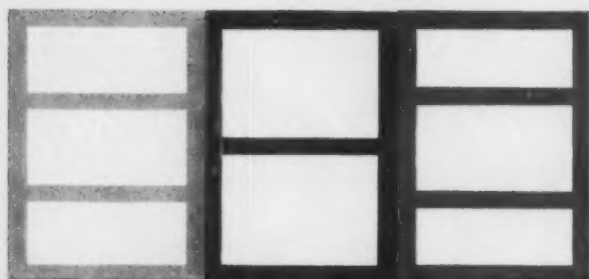
ENTRANCES & DOORS



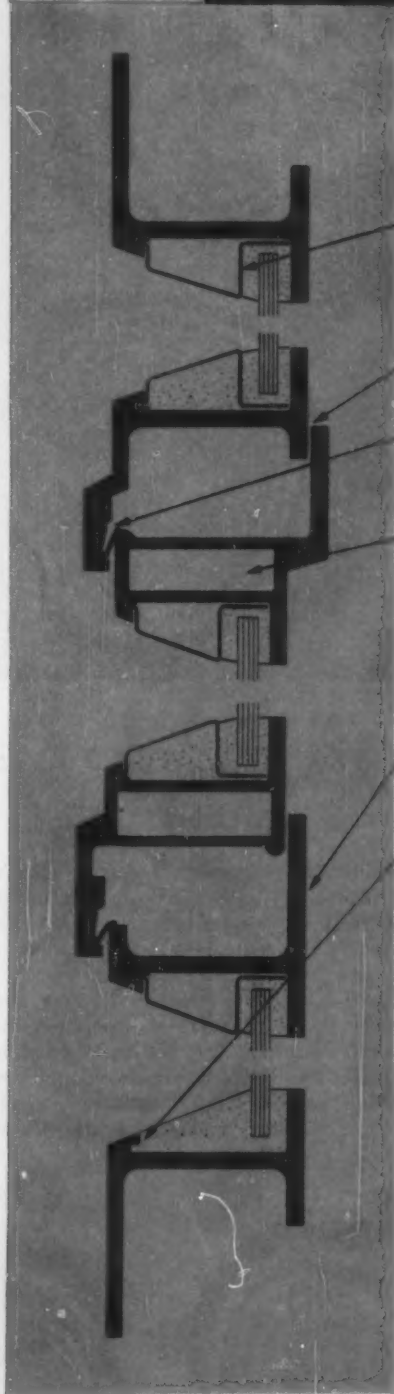
ELEVATOR CABS & DOORS



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NEW soulé series 900W MATERIALLY



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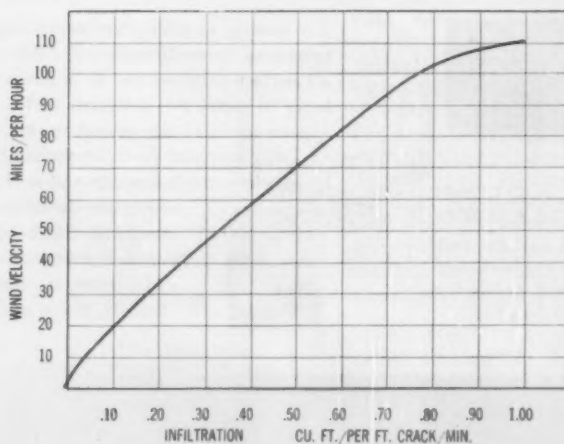
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Tubular ventilator sections for strength and rigidity, freedom to design greater glass areas.

Alumilite finish from our own plant, enhances the beauty, keeps windows new-looking longer.

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weather-stripped aluminum windows— **REDUCE HEAT LOSS, DUST AND AIR INFILTRATION**

help cut air conditioning costs!

New Soulé series 900W (weather-stripped) aluminum windows are proved in rugged hurricane and cyclone tests to exceed all industry specifications for performance. Series 900W are guaranteed not to exceed 0.5 cubic foot of air infiltration per minute per lineal foot of crack at 25 mph (in actual tests, series 900W windows showed only 0.14 cubic foot of air infiltration per minute per lineal foot of crack at 25 mph!). Wind velocities up to 120 mph in maximum design sizes have been experienced with proportionate resistance to infiltration. Proved performance, along with manufacture and installation by Soulé, are important reasons why new Soulé series 900W are the standard of quality in weather-stripped aluminum windows.

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4125



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Smoot-Holman lighting equipment,
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*Designed and engineered for
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climatic conditions.*



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Established 1915

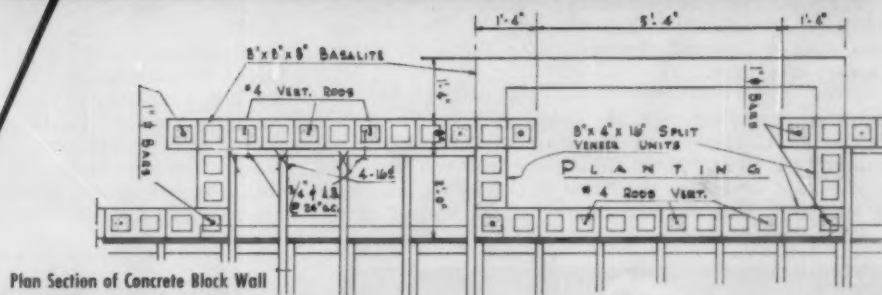
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MADE EASIER**
Send for your FREE
Smoot-Holman
"Lighting Guide"....
and auto-calculator to
compute the required
lamps and fixtures
for any room... for
any lighting job.

SHOWROOM!

Shows off today's sleek cars and the remarkable structural versatility of

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Interior wall treatment illustrates unlimited adaptability of BASALITE. Recessed wall panels are faced with BASALITE split veneer units, in Desert Beige, illuminated to highlight rough textures. Walls and planters are 8" square units painted for striking color harmony.

GASSER AUTOMOBILE AGENCY, Napa, California
 ARCHITECT: Lillis and Smith, A.I.A., Vallejo
 GENERAL CONTRACTOR: Stolte, Inc., Oakland
 MASONRY CONTRACTOR: Mervin R. Gregory, Napa

THIS AUTO SHOWROOM is also a convincing showroom for BASALITE! Dramatic effects achieved with these lightweight concrete units rival the new cars' beauty. But beauty is only one asset of BASALITE: its flexibility stems from its availability in myriad shapes and sizes; fire resistance; sound and temperature insulative qualities; lightweight construction ease. Find out more about BASALITE—and what it can do for you!

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News of the Profession

ELECTIONS. *Coast Valleys chapter, A.I.A.:* William L. Higgins, president; Paul Huston, vice president; William Daseking, treasurer; Ted Chamberlain, secretary; Edward Myers, director. *Colorado chapter:* Carl A. Kloverstrom, president; Edward L. Bunts, vice president; Paul W. Rader, secretary; Robert Berne, treasurer; Earl C. Morris and Henry Baume, directors. *Wyoming chapter:* George Tresier, president; Clinton Hitchcock, vice president; Frederic Porter, secretary-treasurer; Harrison Cook and Robert Wehrli, directors. *Washington State chapter:* James J. Chiarelli, president; Robert H. Dietz, vice president; Walter H. Rothe, vice president; Talbot Wegg, secretary; Albert O. Bumgardner, treasurer; Arnold Gangnes, Harrison J. Overturf, Lloyd Lovegren and John Wright, directors. *Structural Engineers Association of California:* Henry J. Degenkolb, president; William T. Wheeler, vice president; Charles DeMaria, secretary. *S.E.A., Northern California:* J. Albert Paquette, president; Charles DeMaria, vice president; Marvin A. Larson and Richard J. Woodward, directors. *California Council of Landscape Architects:* C. Mason Whitney, president; Courtland Paul, vice president. *Rocky Mountain Association of Landscape Architects:* Sam L. Huddleston, president; S. R. DeBoer and M. Walter Pessmann, first and second vice president; Frank H. Kirch, secretary-treasurer.

APPOINTMENTS. *Frederick M. Mann, Jr.,* Seattle architect, is the University of Washington's new supervising architect. *C. M. "Max" Gilliss* has been named director of public works for the State of California, succeeding Frank B. Durkee, who retired at the end of 1957.



HARDWARE MUTUAL INSURANCE CO., Los Angeles, Calif.
Architect: Stiles and Robert Clements, Architects-Engineers
Contractor: Architectural & Mechanical Products Co.
Panels manufactured and enameled by
California Metal Enameling Co.

SPANDREL AREAS are given life-time protection and attractive symmetrical treatment by use of Porcelain Enamel laminated panels ...adding strength where it's needed and beauty where it shows.

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Calendar of Western Events

- **MARCH 1:** Junior Solar Symposium, Arizona State College, Tempe. Sponsored by ASC, Association for Applied Solar Energy and Arizona Junior Academy of Science
- **MARCH 8-12:** Regional Conference and exhibition of architects' work in school field, American Association of School Administrators, San Francisco
- **APRIL 28-May 2:** Twentieth annual convention, National Association of Architectural Metal Manufacturers, Shamrock Hilton Hotel, Houston
- **JUNE 2-5:** Fourth annual meeting, American Nuclear Society, Los Angeles

Paul O. Davis takes the place of Earl Heitschmidt as a member of the California State Board of Architectural Examiners. *Captain Eugene Peltier, U.S.N.,* commanding officer of the Navy's Construction Battalion Center at Port Hueneme, Calif., became chief of the Bureau of Yards and Docks on January 1, 1958. *Frank Lombardi,* formerly senior city planner for San Francisco's Planning Department, is the Territory of Hawaii's first director of planning.

HONORS AND AWARDS: *William Clement Ambrose,* San Francisco architect, and *A. G. Streblow,* president of the Basalt Rock Company, were named "men of the year" by the San Francisco Building Industry Conference Board. Ambrose received the Board's Honorary and Achievement Awards, respectively. *Dr. Vern O. Knudsen,* pioneer in acoustics, vice-chancellor and dean, Graduate Division, U.C.L.A., has been awarded the first Sabine Medal for his achievements and researches in the field of sound.

WESTERN SECTION

Index To Advertising

Manufacturers' Pre-Filed Catalogs of the firms listed below are available in the 1957 Sweet's Catalog Files as follows:

a Architectural File (green)
ic Industrial Construction File (blue)
lc Light Construction File (yellow)

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Porcelain Enamel Publicity Bureau	48-14
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Western advertising offices: LOS ANGELES, Bob Wettstein, 672 S. Lafayette Park Pl.; PORTLAND, Bob Wettstein, 921 S. W. Washington St.; SAN FRANCISCO, Bob Wettstein, Howard Bldg., 209 Post St.



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Here's a popular-priced version of always-appealing pegged oak flooring. The walnut pegs of this Bruce Ranch Plank Floor are inserted at the factory. The beautiful finish is factory-applied, too, for economy and durability. Alternating 2¼" and 3¼" strips with beveled edges help capture the appearance of a costly random-width plank floor. Bruce Ranch Plank is laid just like any strip floor.

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E. L. BRUCE CO.
Memphis 1, Tennessee



Bruce

Ranch Plank
Floor
Naturally Beautiful

Furniture by Knoll Associates, Inc.
Photo by Hedrich-Blessing



Chester, K-2790-C. Size 19 x 17"

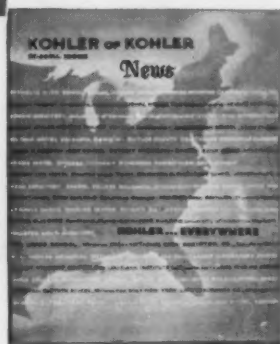
KOHLER CHESTER

New enameled iron lavatory— popular ledge design

Fresh opportunities for varied bathroom ensembles are afforded by this enameled iron ledge lavatory, another first. The Kohler line was also first to include an enameled iron shelf lavatory.

In design, the Chester was inspired by the Chesapeake, of vitreous china, which has an established reputation for popularity and successful sales.

Attractive features include 6 $\frac{3}{4}$ " of wall-bearing surface for extra support, a roomy basin, and built-in soap dish. Like other Kohler lavatories, the Chester has a front overflow, leaving an unbroken expanse of sparkling, easy-to-clean surface in the rear. The convenient Centra combination fitting is all-brass, chromium-plated. Available in the famous Kohler white and any of 7 colors.



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A handsome new booklet—shows with pictures the widespread use of Kohler plumbing fixtures in all types of homes, institutions, commercial and public buildings in every part of the country.

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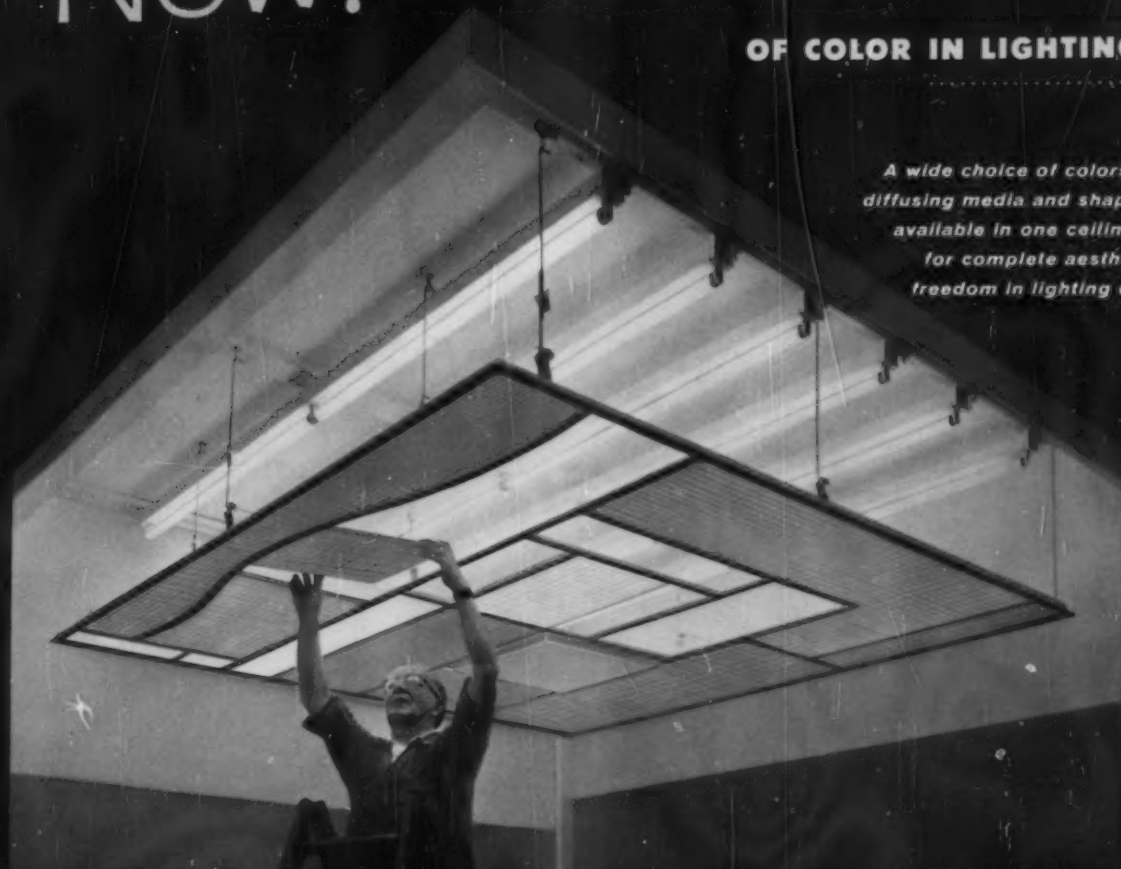
Enameled Iron and Vitreous China Plumbing Fixtures • Brass Fittings • Electric Plants • Air-cooled Engines • Precision Controls

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CHOOSE FROM A RAINBOW

OF COLOR IN LIGHTING!

*A wide choice of colors,
diffusing media and shapes
available in one ceiling system
for complete aesthetic
freedom in lighting design*



View of test ceiling at our plant.

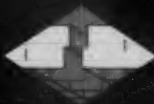
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The simplest, most versatile installation system ever developed!

Here is the world's first large area lighting system that gives you practically unlimited variety of form, as well as color and diffusing media. Now you can design lighting layouts, from the conventional to the abstract, curved or straight in any combination of louver, molded forms, glass and accent lighting . . . in soft pastel pink, blue, green and white . . . in a ceiling completely free of any visible screws, bolts or mechanical devices.

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Design of our Overlap Polycube™ Louver (1½" cube), an 2-ft. wide modules eliminates the necessity for crossbars, regardless of how long the run . . . also provides 45° x 45° shielding for optimum seeing comfort.



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by **GENERAL BRONZE**
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ENSEMBLE - OLEG CASSINI

ALUMINUM WINDOWS • SLIDING DOORS

Construction Cost Indexes

Presented by Clyde Shute, Director of Statistical Policy, Construction News Div., F. W. Dodge Corp., from data compiled by E. H. Boeckh & Assoc. Inc.

Labor and Materials: U.S. average 1926-1929=100

NEW YORK

ATLANTA

PERIOD	RESIDENTIAL		APTS., HOTELS, OFFICE BLDGS.	COMMERCIAL AND FACTORY BLDGS.		RESIDENTIAL		APTS., HOTELS, OFFICE BLDGS.	COMMERCIAL AND FACTORY BLDGS.	
	Brick	Frame	Brick and Concrete	Brick and Concrete	Brick and Steel	Brick	Frame	Brick and Concrete	Brick and Concrete	Brick and Steel
1930	127.0	126.7	124.1	128.0	123.6	82.1	80.9	84.5	86.1	83.6
1935	93.8	91.3	104.7	108.5	105.5	72.3	67.9	84.0	87.1	85.1
1939	123.5	122.4	130.7	133.4	130.1	86.3	83.1	95.1	97.4	94.7
1946	181.8	182.4	177.2	179.0	174.8	148.1	149.2	136.8	136.4	135.1
1947	219.3	222.0	207.6	207.5	203.8	180.4	184.0	158.1	157.1	158.0
1948	250.1	251.6	239.4	242.2	235.6	199.2	202.5	178.8	178.8	178.8
1949	243.7	240.8	242.8	246.6	240.0	189.3	189.9	180.6	180.8	177.5
1950	256.2	254.5	249.5	251.5	248.0	194.3	196.2	185.4	183.7	185.0
1951	273.2	271.3	263.7	265.2	262.2	212.8	214.6	204.2	202.8	205.0
1952	278.2	274.8	271.9	274.9	271.8	218.8	221.0	212.8	210.1	214.3
1953	281.3	277.2	281.0	286.0	282.0	223.0	224.6	221.3	221.8	223.0
1954	285.0	278.2	293.0	300.6	295.4	219.6	219.1	233.5	225.2	225.4
1955	293.1	286.0	300.0	308.3	302.4	225.3	225.1	229.0	231.5	231.8
1956	310.8	302.2	320.1	328.6	324.5	237.2	235.7	241.7	244.4	246.4
Aug. 1957	321.0	310.7	336.8	349.5	344.6	243.6	241.3	252.0	255.6	258.8
Sept. 1957	321.2	310.9	337.4	349.5	345.2	242.0	239.3	251.4	255.2	258.2
Oct. 1957	320.3	309.8	337.0	349.2	344.8	242.0	239.3	251.4	255.2	258.2
% increase over 1939										
Oct. 1957	159.4	153.1	157.8	161.8	265.0	180.4	188.0	164.4	162.0	172.7

ST. LOUIS

SAN FRANCISCO

PERIOD	RESIDENTIAL	RESIDENTIAL	APTS., HOTELS, OFFICE BLDGS.	COMMERCIAL AND FACTORY BLDGS.	COMMERCIAL AND FACTORY BLDGS.	RESIDENTIAL	RESIDENTIAL	APTS., HOTELS, OFFICE BLDGS.	COMMERCIAL AND FACTORY BLDGS.	COMMERCIAL AND FACTORY BLDGS.
	Brick	Frame	Brick and Concrete	Brick and Concrete	Brick and Steel	Brick	Frame	Brick and Concrete	Brick and Concrete	Brick and Steel
1930	108.9	108.3	112.4	115.3	111.3	90.8	86.8	100.6	104.9	100.4
1935	95.1	90.1	104.1	108.3	105.4	89.5	84.5	96.4	103.7	99.7
1939	110.2	107.0	118.7	119.8	119.0	105.6	99.3	117.4	121.9	116.5
1946	167.1	167.4	159.1	161.1	158.1	159.7	157.5	157.9	159.3	160.0
1947	202.4	203.8	183.9	184.2	184.0	193.1	191.6	183.7	186.8	186.9
1948	227.9	231.2	207.7	210.0	208.1	218.9	216.6	208.3	214.7	211.1
1949	221.4	220.7	212.8	215.7	213.6	213.0	207.1	214.0	219.8	216.1
1950	232.8	230.7	221.9	225.3	222.8	227.0	223.1	222.4	224.5	222.6
1951	252.0	248.3	238.5	240.9	239.0	245.2	240.4	239.6	243.1	243.1
1952	259.1	253.2	249.7	255.0	249.6	250.2	245.0	245.6	248.7	249.6
1953	263.4	256.4	259.0	267.0	259.2	255.2	257.2	256.6	261.0	259.7
1954	266.6	260.2	263.7	273.3	266.2	257.4	249.2	264.1	272.5	267.2
1955	273.3	266.5	272.2	281.3	276.5	268.0	259.0	275.0	284.4	279.6
1956	288.7	280.3	287.9	299.2	293.3	279.0	270.0	288.9	298.6	295.8
Aug. 1957	293.0	284.6	297.0	308.3	306.1	288.3	276.8	305.0	318.0	314.2
Sept. 1957	294.8	285.5	299.8	312.5	309.4	289.1	275.3	308.0	322.8	317.5
Oct. 1957	292.7	284.1	297.1	308.9	306.0	287.3	273.8	306.9	320.4	316.4
% increase over 1939										
Oct. 1957	165.6	165.5	150.3	157.8	157.1	172.1	175.7	161.4	162.8	171.6

Cost comparisons, as percentage differences for any particular type of construction, are possible between localities, or periods of time within the same city, by dividing the difference between the two index numbers by one of them; i.e.:

index for city A = 110

index for city B = 95

(both indexes must be for the same type of construction).

Then: costs in A are approximately 16 per cent higher than in B.

$$\frac{110-95}{95} = 0.158$$

Conversely: costs in B are approximately 14 per cent lower than in A.

$$\frac{110-95}{110} = 0.136$$

Cost comparisons cannot be made between different types of construction because the index numbers for each type relate to a different U. S. average for 1926-29.

Material prices and wage rates used in the current indexes make no allowance for payments in excess of published list prices, thus indexes reflect minimum costs and not necessarily actual costs.

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Inland Steel Building, Chicago, Illinois

ARCHITECTS - Skidmore, Owings and Merrill

MECHANICAL ENGINEER - Skidmore, Owings and Merrill

OWNER - Inland Steel Co.

GENERAL CONTRACTOR - Turner Construction Co.

PLUMBING WHOLESALER - Warren Barr Supply Co.

PLUMBING CONTRACTOR - Economy Plumbing and Heating Co., Inc.

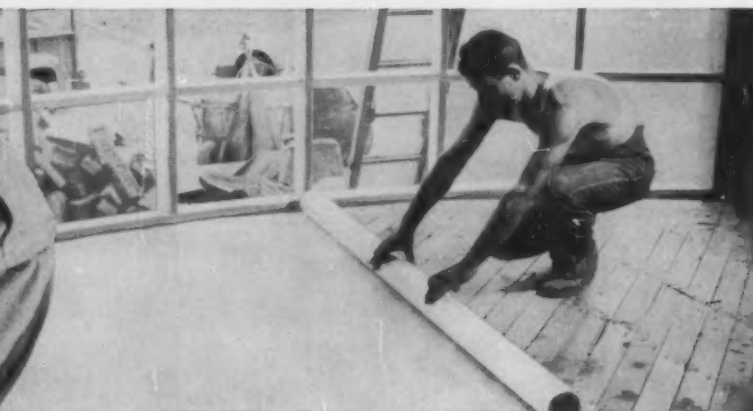
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Division of Rheem Manufacturing Company
16 Pearl Street, Metuchen, N. J.
The Fastest Growing Name in Plumbing Fixtures

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GER-PAK

VIRGIN POLYETHYLENE FILM

Virtually SEALS OUT Cellar Moisture and Dust!



Satisfy yourself and the homeowner with a positive way of preventing moisture and dust from coming up through the basement. Use Ger-Pak film over sub-flooring to seal out unwanted cellar moisture and dust.

All over the country successful builders agree that Ger-Pak virgin polyethylene film is the most effective, versatile moisture-vapor and dust barrier material. In addition to its superior dust-sealing and moisture vapor protection in sub-flooring, Ger-Pak film excels under slab foundations to end wet basement problems, and to reduce sidewall moisture penetration to a minimum.

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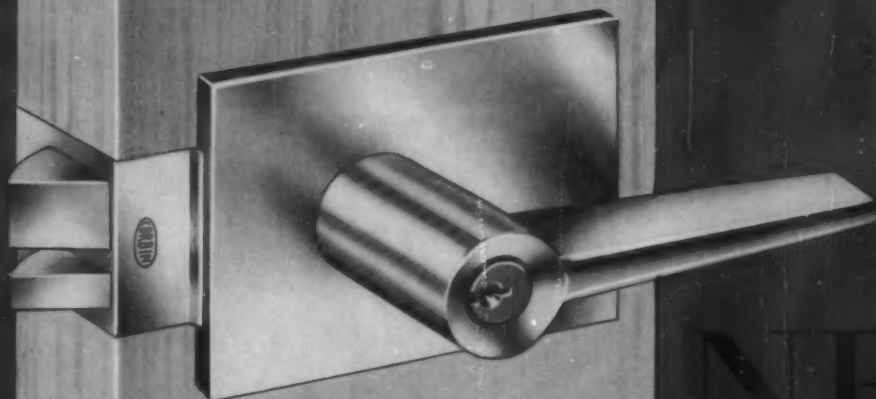
And only Ger-Pak film offers the widest range of widths — from 10-inch for flashing all the way up to 40 feet. Available in clear, black and special opaque white. Ask your dealer about tough, lightweight, easy to handle, and inexpensive Ger-Pak film today.

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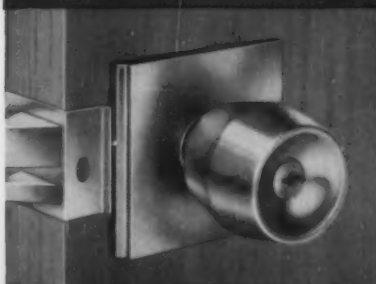


New LEVER HANDLE Design No. 90055

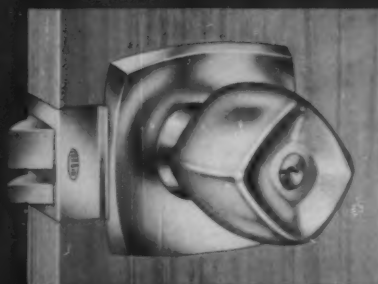
A classic example of styling simplicity! This newest Corbin creation is the first lockset to offer easy lever action for utmost lock convenience *plus* famous UNIT construction for faultless security! Can be used with other UNIT lock escutcheons.

NEW!

4 Corbin Originals in UNIT Locks



New MELODY Design No. 911



New VEGAS Design No. 913



New CHALICE Design No. 909

Simplicity is the first word for the Corbin UNIT Lock line. The striking new custom designs above . . . together with five other equally beautiful designs . . . now offer you greater latitude in door styling for commercial and industrial buildings, and luxury homes.

Unique, *one-piece* assembly also makes the UNIT lock far easier and faster to install. Only a simple mortise is required — any of 20 available functions fits into a quick cutout in the door. Lock mechanism is factory-assembled and *permanently* aligned in a tough extruded brass frame, leaving practically no chance for misapplication.

Available with cast brass, bronze or aluminum trim, in all popular finishes. Ask your Corbin dealer for a demonstration.

CONSTRUCTION FEATURES:

- Internal parts of long-wearing, nonferrous metal or zinc-plated, dichromated steel
- 100% reversible
- Positive deadlocking
- Famous Corbin master ring cylinder provides unusually flexible keying system and maximum security at the same time
- Accepted by Underwriters' Laboratories for use on all Class B label doors

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The American Hardware
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Required Reading

ABOUT NERVI'S APPROACH TO DESIGN

By Herbert M. Noyes, Jr.

Structures. By Pier Luigi Nervi; translated by Giuseppina and Mario Salvadori. F. W. Dodge Corp. (New York) 1956. 118 pp., illus. \$6.95

Top: Stress analysis of hangar (1940). Center: Turin Exhibition Building—Main Hall (1948). Bottom: New Tobacco Factory, Bologna (1949).

Few indeed are the ranks of the true "master builders" in our times, and of these few, none speaks so clearly to each of us (who fulfill only part of his far ranging function) as does Pier Luigi Nervi.

Nervi has combined a basic mathematical and engineering education, forty years of designing and building reinforced concrete structures, and an instinctive esthetic sensitivity to produce a succession of truly significant architectural achievements.

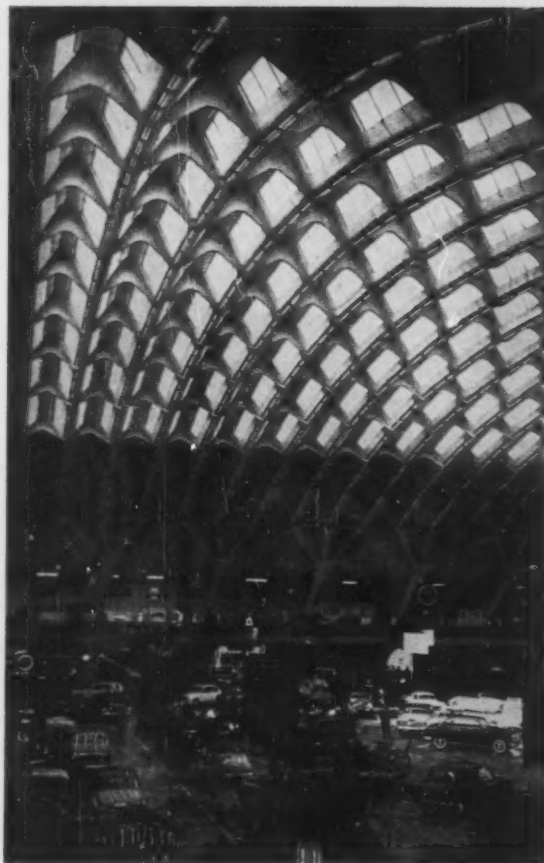
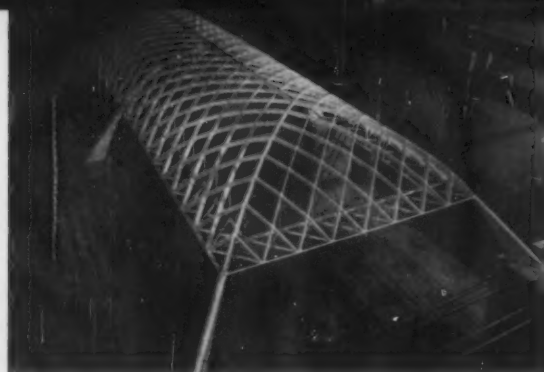
As founder of the famous Italian company, "Ingg, Nervi and Bartoli," Nervi has produced his masterpieces under an economic pressure dictated by Italy's unusual (to us in the United States) system of building. Design solutions to fulfill the client's needs are submitted competitively with construction cost bids. This system produced all of Italy's significant works in the last fifty years, according to the author, but would appear to be less sure of success in this country where the prosiac rather than the imaginative is generally the economically sound approach.

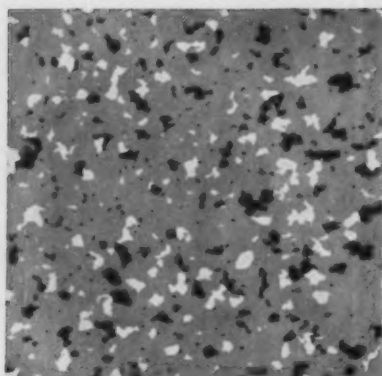
Nervi's earlier works, represented by the Florence Stadium and the great precast lamella hangars, are only relatively more conventional in design than his later work. They indicate his continuing search for "truth" in design as he sees it: namely that intuitive interpretation and expression of structural phenomena give economy of means as well as unexcelled architectural beauty.

Nervi's wide-angled approach to the whole world of construction is probably only hinted at in this relatively small book. One wishes genuinely to hear more of his philosophy of the education of architects, a subject which seldom lacks for protagonists of many persuasions. Developments of intuitive feelings for structure are more important to him under certain circumstances than lofty academic theories.

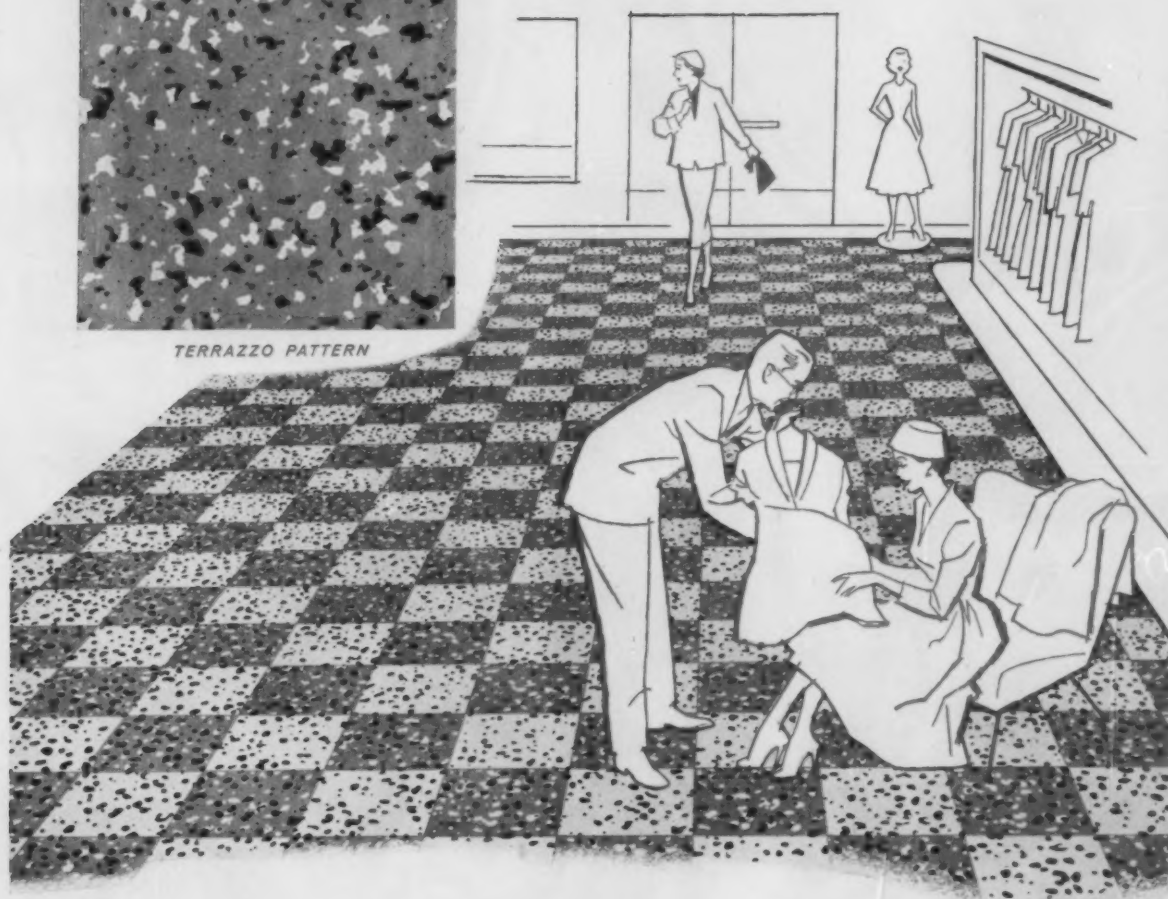
He speaks of the responsibility of the client (particularly governmental agencies), for the overall quality of the architecture of any nation; and explains why competitions have failed in the past and how to make them successful in the future. In regard to reinforced concrete, he decries the lack of research toward advancing design analysis methods

continued on page 62





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Here's Customer-inviting beauty that lasts longer with less care

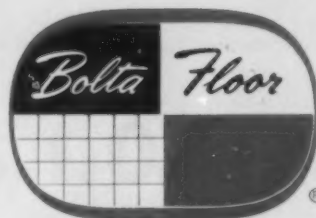
Bolta-Floor's rich decorative colors and patterns help "dress-up" stores . . . make them more appealing to shoppers. Best of all heavy store traffic has little effect on Bolta-Floor. Its smooth, non-porous surface resists soil, scuffs and stains . . . keeps its lustrous "just-polished" appearance with far less care than other types of flooring. Bolta-Floor is dimensionally stable . . . won't crack, chip or shrink. Exceptional beauty and outstanding performance makes Bolta-Floor the wise choice for modern stores, buildings and institutions.

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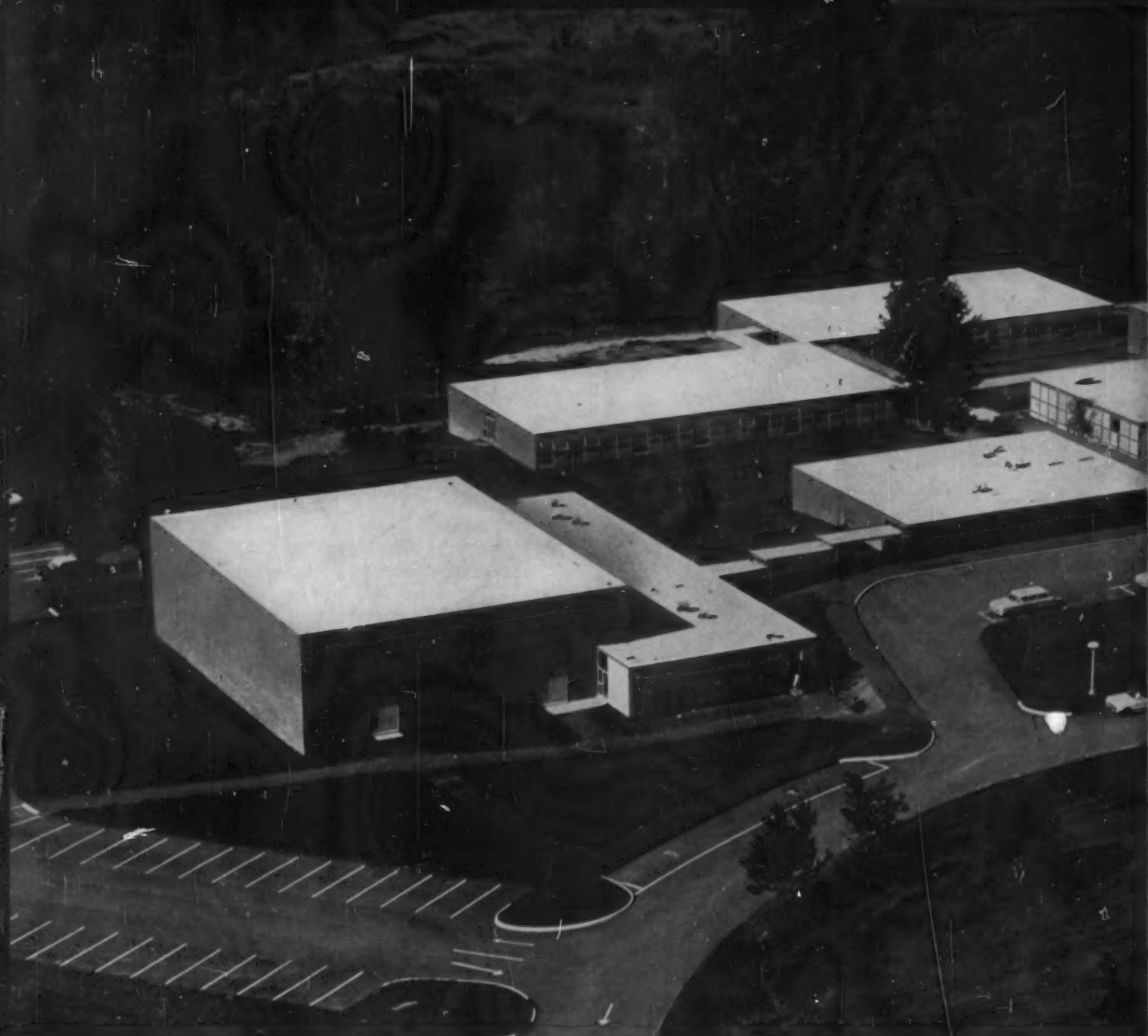
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FLOORING FOR . . .*

Stores, Restaurants
Hotels, Motels
Banks, Offices
Hospitals, Homes



John Jay Junior-Senior High School, Cross River, N.Y. Architects: Ketchum, Gins & Sharp, New York. Structural Engineers: Severud-Elstad-Krueger.

A Lupton aluminum curtain- helps sustain a single design theme throughout eight

The new \$1,700,000 John Jay High School in New York's Katonah-Lewisboro district is a monument to the determination and pride of a community. And, with its completion, the project also becomes an indication of what architects can accomplish with a low-cost and versatile LUPTON curtain-wall system.

At the outset, it was obvious that each building would present particular planning problems of its own (see illustrations at right), yet it was esthetically desirable that the school—taken as a whole—retain a continuity of design. A most satisfactory combination of beauty and economy was found in aluminum curtain-wall construction.

Imaginative use of LUPTON aluminum projected window

components and insulated porcelain-enameled panels enabled the architects to incorporate the required combinations of vision, natural lighting, and ventilation in their designs without destroying the relation of each building to its neighbors. Moreover, this was accomplished within the Trustees' original budget.

The versatility and design flexibility of LUPTON aluminum curtain-wall systems make an investigation worth your while. They save money, go up fast (usually from *within* the building, without scaffolding), and permit creative freedom for far less than you'd think. By leaving the entire job to LUPTON—including erection by swift, skilled LUPTON crews—you can effect even greater savings.



Photographs by Continental Air Views and Joseph W. Molitor.

wall system

dissimilar buildings

See Sweet's (Sections 3 and 17) for the Michael Flynn Curtain Wall and Metal Window Catalogs, and write to us for further information. For fast action, look up the LUPTON representative in your Yellow Pages, under "Windows-Metal."

LUPTON

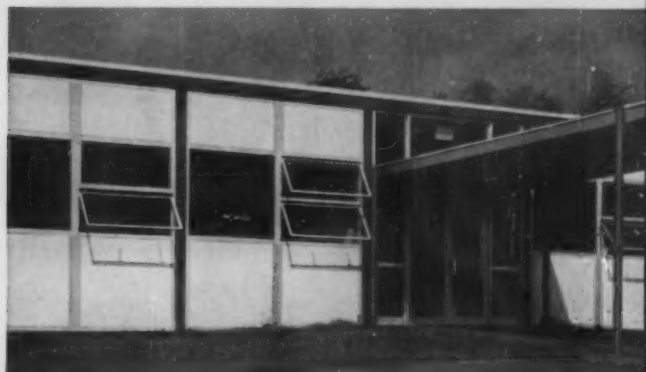
METAL WINDOWS • CURTAIN WALLS

MICHAEL FLYNN MANUFACTURING COMPANY

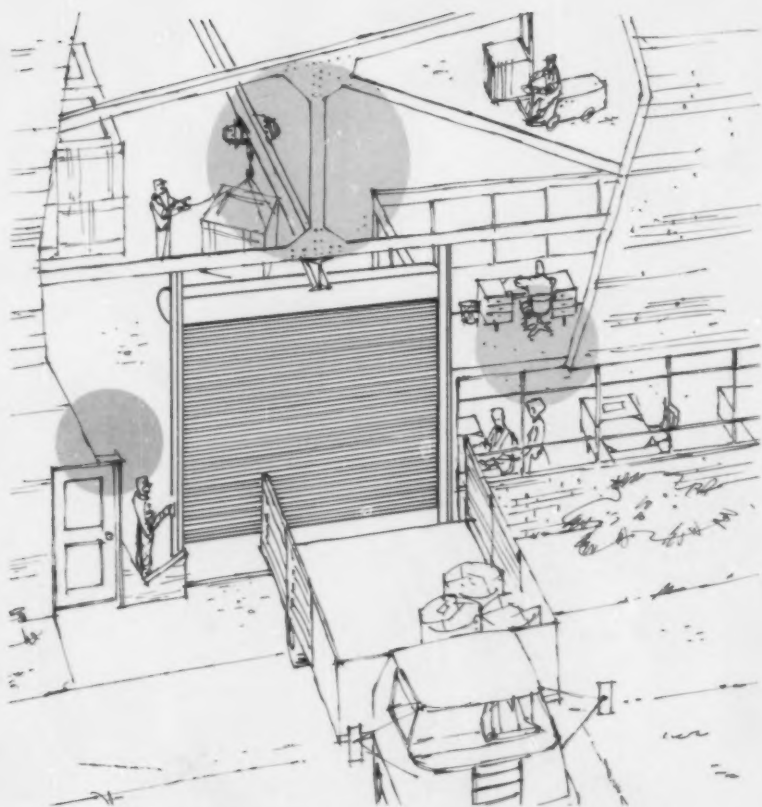
MAIN OFFICE AND PLANT: 700 E. GODFREY AVE., PHILA. 24, PA.



ABUNDANT NATURAL LIGHT was wanted for this north wall of the John Jay library. LUPTON aluminum projected windows were selected and delivered ready for installation. Good-looking, rugged, and simple to put up, they provide light and maximum controlled ventilation to this outstanding building.



GLASS BALANCED WITH OPAQUE PANELING for classrooms. Here, natural lighting was neither practical nor desirable, and custom-engineered, insulated porcelain-enameled panels by LUPTON were specified for their beauty and thermal insulation value. The LUPTON windows open for air and for cleaning from the inside.



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Walter Balfour & Co. Inc. Brooklyn 22, New York

Required Reading

Continued from page 58

to keep up with the need of many imaginative designers, and stresses the need for continual and widespread experimental work in skin resistant structures. He has fostered the model stress analysis technique where applicable for problems without theoretical solutions.

For the past ten years his efforts have been largely directed toward freeing reinforced concrete design from the limitations of wooden formwork. Nervi's carefully worked out solution to the problem was the invention of "Ferro-cemento". An ingenious method of using maximum percentage of steel in the form of wire-mesh and minimum percentage of high-strength cement mortars in very thin sections enabled him to eliminate forms entirely for radically different smaller structures; to use "Ferro-cemento" forms for large repetitive structures and to precast light-weight parts for spanning a huge space with relatively inexpensive techniques.

Nervi has certainly achieved more daring results with reinforced concrete than even his great predecessors, Perret and Maillart, but still he envisions reinforced concrete flowering into form in architecture which will characterize our culture for scholars of the future. "Its structural limitations are hard to foresee, ... [and] the amazing results achieved so far will be easily surpassed."

With such a man as this speaking —enthusiastic, humble and dedicated —how can we help but listen and be inspired?

Technical References

Research On Fire

This hardbound volume is a report to the National Fire Protection Association's Committee on Research, describing the facilities, personnel and management of some of the agencies engaged in research on fire. Its primary value to architects would be as a guide to what research is being done, how it is conducted, and sources from which information would be available. Some results are noted. *National Fire Protection Association, 60 Batterymarch St., Boston 10, Mass. 183 pp., illus. \$5.00.*

more reviews on page 286



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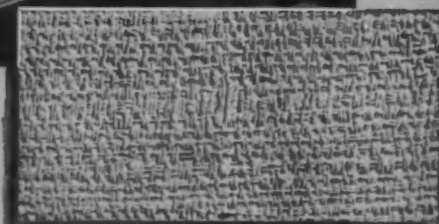


☛ The blue of the sky and the grey green of the sea brighten corridor walls in Vicrtex VEF MADAGASKA.

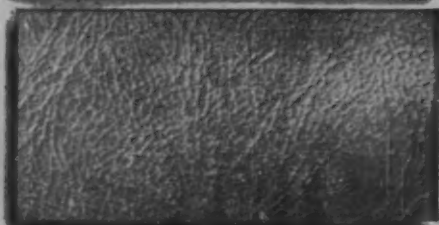
The major operating room (one of six) is protected from floor to ceiling with HEAVY DUTY VEF DADO-WALL, and there's a porch-like atmosphere in the observation room with its pleasant wainscoting of Vicrtex.



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heavy duty
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Consultant Designers: M. Saphier Associates, Inc., New York City
Contractor: N. J. Post Construction Co., Oaklyn, N. J.
Precast and prestressed concrete units manufactured and erected by:
Edward Campbell Co., Vineland, N. J.

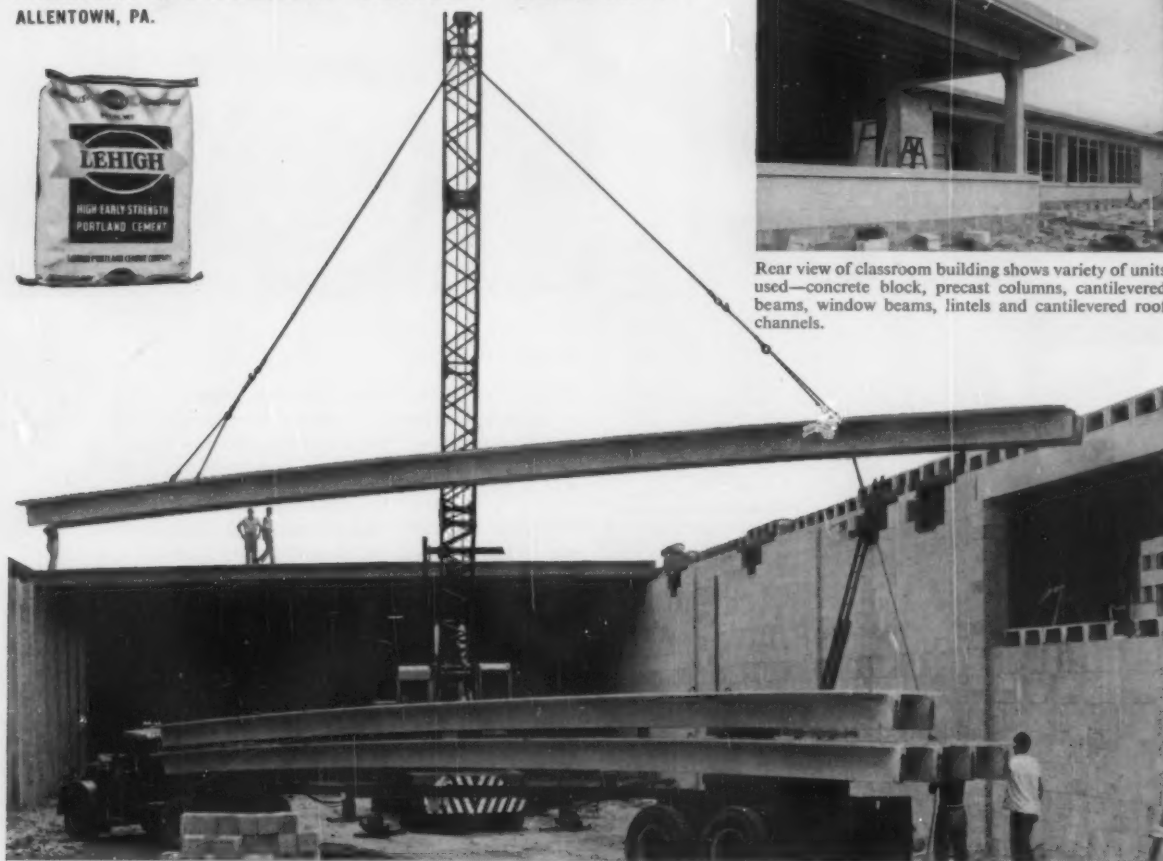
Precast concrete construction throughout . . .

The growing trend toward precast concrete is illustrated by this new Beth Israel Synagogue and School at Vineland, New Jersey. From standard concrete block to huge 60 ft. prestressed double tees, precast concrete serves both architecturally and structurally.

In precasting these units, the Edward Campbell Company used Lehigh Early Strength Cement for maximum production efficiency and economy. For example, in making the double tees, they used Lehigh Early Strength Cement and hot water curing. Result: early removal of units and reuse of forms in less than half the time required with regular portland cement.

This is typical of the advantages of Lehigh Early Strength Cement in modern concrete construction.

LEHIGH PORTLAND CEMENT COMPANY ALLENTOWN, PA.



38 of these prestressed double tee roof beams (60' x 4' x 16") will form the roof of the synagogue.



Placing one of the 440 "Clearspan" channels in the roof of the classroom building.



This inverted tee beam, 2'10" deep x 27' long, was especially cast for the job. Note extensive concrete masonry in common, stack and ashlar patterns. Load bearing walls include pilaster and bond beam block.

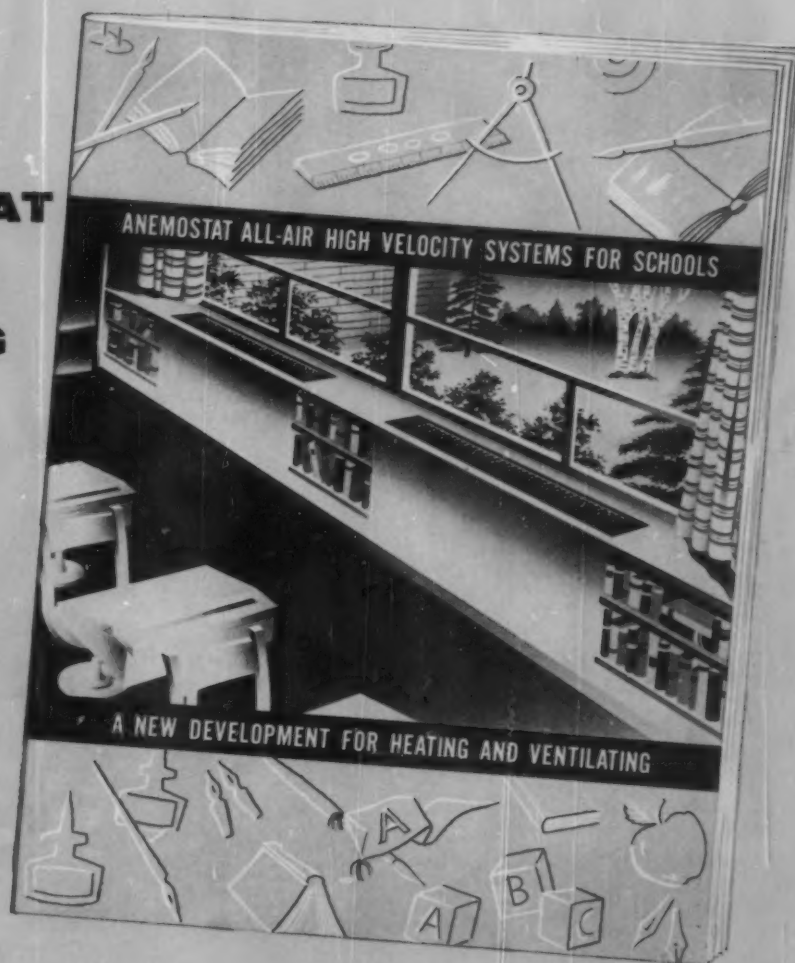


Rear view of classroom building shows variety of units used—concrete block, precast columns, cantilevered beams, window beams, lintels and cantilevered roof channels.

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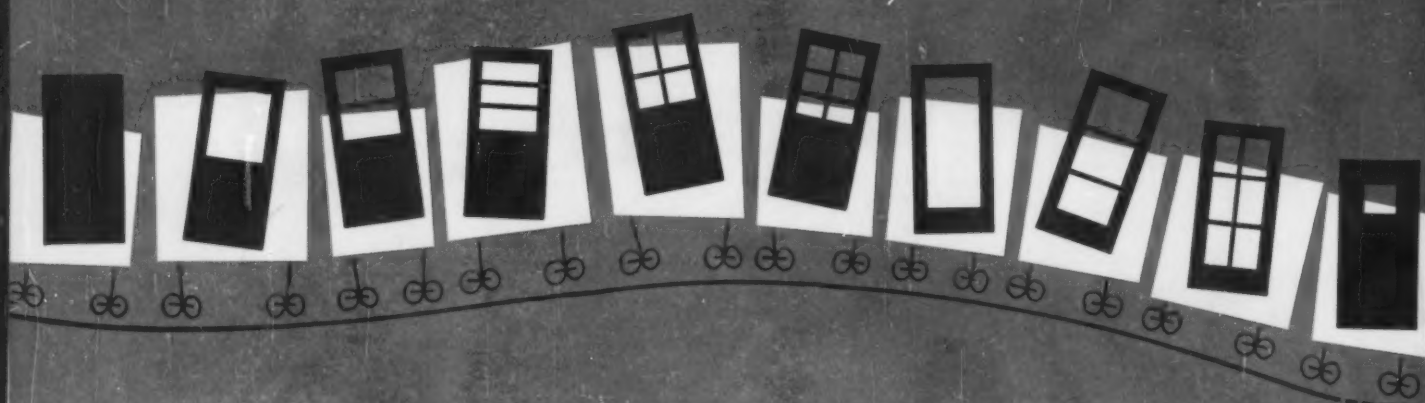
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								U	B	B	E

WHAT YOU SHOULD KNOW

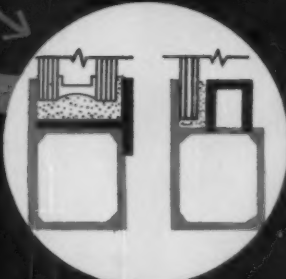
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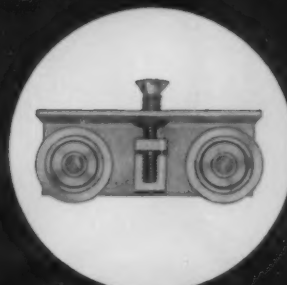
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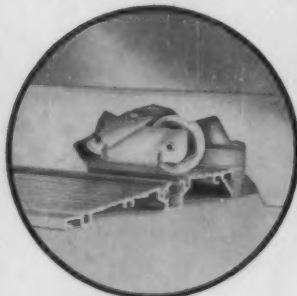
Adjustable screw fastened glass stops allow use of four different glass thicknesses: One inch insulation glass, three sixteenth's and seven thirty-second's crystal and one quarter inch plate. Glazing time is cut to the minimum.



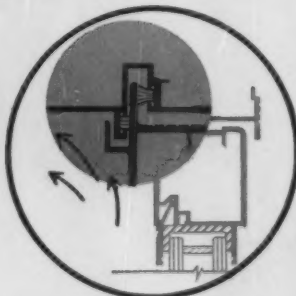
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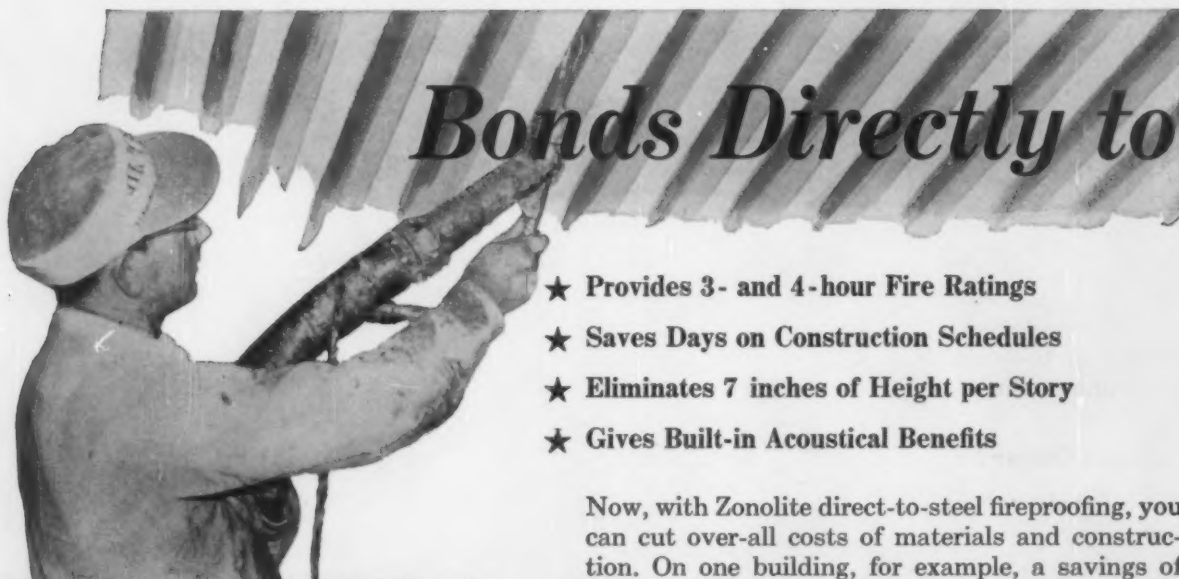
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- ★ Eliminates 7 inches of Height per Story
- ★ Gives Built-in Acoustical Benefits

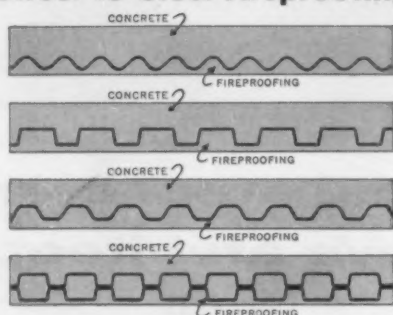
Now, with Zonolite direct-to-steel fireproofing, you can cut over-all costs of materials and construction. On one building, for example, a savings of \$30,175 was effected simply by using this new technique in lieu of another fireproofing method. Zonolite direct-to-steel fireproofing "has everything"—it speeds work progress, provides three- and four-hour fire ratings—provides additional bonuses other fireproofings do not offer.

Zonolite direct-to-steel fireproofing amazingly sticks to the underside of steel floors, applies quickly by hand or machine—reducing former construction schedules by days. It provides its own attractive finish.

Sound-Conditions As You Fireproof!

This new direct-to-steel technique does more than fireproof—it *sound conditions!* Zonolite fireproofing

Typical Steel Floor Systems Using ZONOLITE® Direct-to-Steel Fireproofing



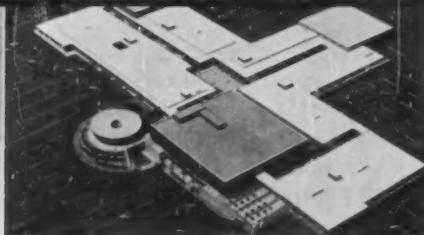
OTHER WAYS TO ACHIEVE FASTER, LOWER-COST CONSTRUCTION WITH



In Bedford, N. H., School, insurance savings quickly pay for the Zonolite Plaster Fireproofing and Zonolite Acoustical Plastic. Arch.: A. J. Majeski. Plast. Contr.: J. F. McGranahan.



3325 Wilshire Blvd., office building, Los Angeles, Calif., uses Zonolite Plaster Fireproofing and Zonolite Spandrel Back-up System throughout. Arch.: Victor Gruen. Plast. Contr.: Martin Bros.



Gulfgate Shopping City, Houston, Texas, has Zonolite Plaster Fireproofing throughout. Arch.: John Graham & Co. Plast. Contr.: Tobin & Rooney.

New Advanced Technique for **FIREPROOFING**

Underside of Steel Floors!

is composed of vermiculite and suitable binders with exceptional noise-reducing characteristics. The architect can often design so that further sound-conditioning is unnecessary.

Reduces Other Material Costs

With Zonolite direct-to-steel fireproofing you cut 7 inches from the height of each floor—a gain of one story in every 14 in multi-story construction, a saving on other construction materials.

Tenant Changes, Mechanical Alterations Easily Accomplished

Because the fireproofing is applied direct-to-steel—up high, out of the way—there is free access to the mechanical installations. Tenant changes are accomplished without cutting through the fireproofing in new or old buildings.

BE PREPARED to make the most of Zonolite direct-to-steel fireproofing. **BE INFORMED** on quick, sure, low cost fireproofing in all types of construction. Tear out the coupon now for **FREE** reference booklet giving ratings, application data, all details.

Typical ZONOLITE DIRECT-to-STEEL Fireproofing Installations

AAA Office, Kalamazoo, Mich. Fireproofed throughout with Zonolite applied directly to steel. Arch.: Louis Kingscott & Associates. Plast. Contr.: Ben Schumann.



Zonolite Fireproofing was applied to underside of steel by machine in new-type steel roof at Phoenix, Ariz., Coliseum. Plast. Contr.: Gray Plastering Co.



Fireproofing direct to underside of steel floors in Bell Telephone Building, Pittsburgh. Arch.: Press & William C. Dowler and Associates. Plast. Contr.: Easley and Rivers.



ZONOLITE PLASTER FIREPROOFING AND ZONOLITE ACOUSTICAL PLASTIC



New York International Airport, Idlewild, N. Y., world's largest, is made fire-safe with Zonolite Plaster Fireproofing throughout. Arch.: Skidmore, Owings & Merrill. Plast. Contr.: Mario & DiBono.

ZONOLITE COMPANY, Dept. AR-18
135 S. LaSalle St., Chicago 3, Illinois

Send me booklet PA-41 "Plaster and Acoustical Systems", and Data Sheet, PA-35 on "Direct-to-Steel Fireproofing".

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Firm

Address

City Zone State

SEAPORCLAD* LAMINATED-INSULATED PANELS COMBINE VIVID COLOR, DESIGN FLEXIBILITY IN CUBAN ELECTRIC COMPANY BUILDING



The outstanding Cuban Electric Company building in Havana, Cuba is another shining example of Seaporclad porcelain enamel on steel laminated-insulated curtain-wall panels.

Design flexibility was gained by the utilization of 2"-thick panels with Foamglas insulation, creating a "U" factor of .15. A thinner panel — only 3/4" thick — with a core of cement asbestos board was used where "U" factor value was not a consideration. The bluish-gray color and rippled texture further enhance the beauty of design.

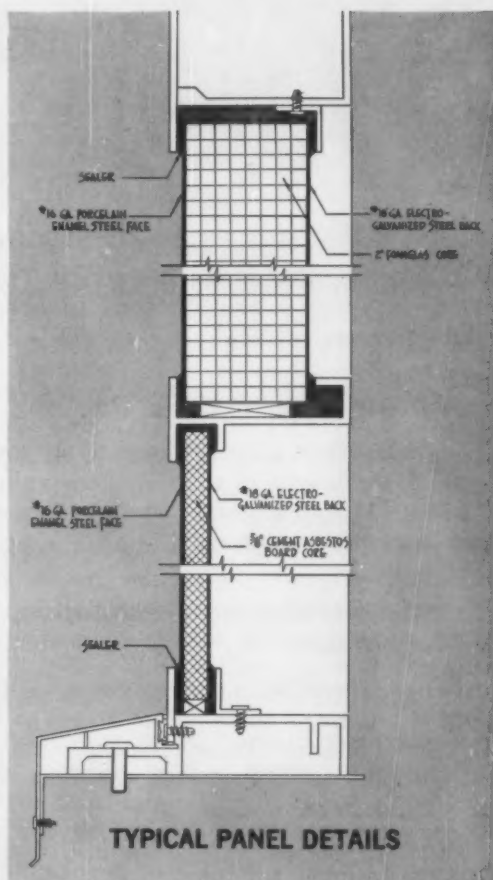
The next time you design a building, consider the many advantages of Seaporclad curtain wall panels. With almost unlimited color and texture, as well as form, Seaporclad insulated panels are light in weight and easily installed in a fraction of the time required for other construction methods. And you can assure the owners of low maintenance costs for the life of the building.

For more information about Seaporclad, send for brochure 12.



Colorful Seaporclad insulated panels give the Cuban Electric Company building a distinctive appearance. Beautiful bluish-gray and rippled texture complement the over-all design.

Architect: Jorge Luis Echarte, Havana, Cuba
Contractor: Pan Am Products Co., Havana, Cuba



*Reg. U. S. Pat. Off.

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These licensed manufacturers fabricate SEAPORCEL products in the countries listed below. Personnel trained in SEAPORCEL's U.S. plant.

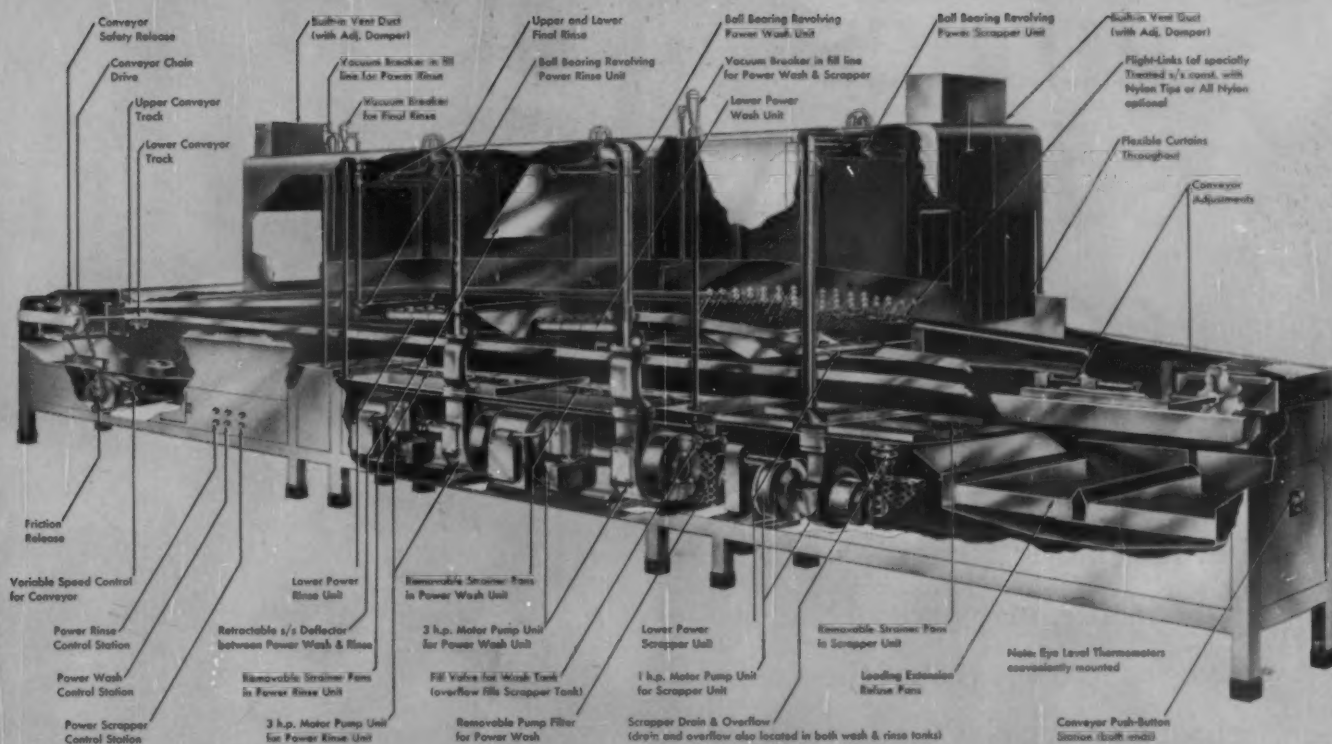
IN AUSTRALIA: Metters, Ltd., Sydney, New South Wales
A. Simpson & Son, Ltd., Adelaide, South Australia
IN AUSTRIA: Kleiner & Fleischmann, Moedling, N. Oe.
IN BRAZIL: Rheem Metalurgica, S.A., Rio De Janeiro
IN CANADA: General Steel Wares, Ltd., London and Toronto, Ont
IN CHILE: Fabrica de Enlozados, S.A., "Fensa", Santiago

IN FRANCE: Societe Equipement Menager Japy, Paris
IN GREAT BRITAIN: Edward Curran Engineering, Ltd., Cardiff, Wales
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IN NORWAY: Moss Glasvaerk, Moss
IN SWITZERLAND: Metallwarenfabrik Zug, Zug



37 reasons

why your kitchen layouts work with Hobart



In kitchens where speed and capacity are demanded, a Hobart flight-type dishwasher is the complete answer for making your kitchen layouts work economically and efficiently. Completely automatic fresh water scraping, power washing and rinsing...dishes are racked in the conveyor in one amazingly fast operation...no need for constant supervision. Flight-type sizes range from 12 to 26 feet long, with conveyor speeds from 5 to 12 feet per minute. Check the features above that assure you of trouble-free operation. In the complete line of Hobart dishwashers there are over 50 different models...one is exactly right for any operation, regardless of size or volume.

You, as an architect, can readily appreciate the flexibility and adaptability of the Hobart line as well as the nationwide sales and service organization that backs all Hobart products. The best kitchen layout is not efficient unless the machines you specify are dependable. Check Sweet's Architectural File for specifications on all Hobart kitchen and dishwashing machines or send in the coupon.



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machines

The World's Largest Manufacturer of Food, Kitchen and Dishwashing Machines

The Hobart Manufacturing Co., Dept. HAR, Troy, Ohio

Please send information and complete specifications on Hobart continuous racking dishwashers ☐ semi-automatic ☐ or dual-drive automatic dishwashers ☐ kitchen machines ☐.

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My Name.....

Address.....

City.....Zone.....State.....

How you can REDUCE SCHOOL COSTS...

Instead of stinting on the heating and ventilating system in an effort to economize, many school boards have reduced the cost of their new school buildings by the installation of an advanced hot water system—and at the same time have increased their classroom thermal comfort.



? *What is this heating and ventilating system that saves up to 20% of the construction, equipment and installation costs incurred by some other systems?*

A. It is the Nesbitt Series Hot Water Wind-o-line System. Every classroom has its own Syncretizer for heating, ventilating, and natural air cooling. Wind-o-line fin-tube radiation (in wall-hung enclosures or in storage cabinets) extends along the sill to protect against cold walls and window downdraft.

Q. *How does this system save so much money?*

A. The copper tubing of the Wind-o-line radiation becomes the supply and return mains for the Syncretizers in a group of classrooms or an entire wing. This saves on pipes and covering and eliminates expensive pipe trenches, mains and runouts. Circulating less hot water, smaller pipes and pumps are needed. Piping within the units is factory-assembled; labor costs are reduced. Night temperature is maintained by gravity heating, saving controls.

Q. *How does the system create a better thermal environment?*

A. By solving (in the only sure way, with Wind-o-line radiation) the cold wall and window downdraft problem, as well as providing (by means of the Syncretizer) the heating, ventilating and natural cooling called for in each classroom. This double protection assures healthful comfort—without physical distraction—for every pupil in the room—even those along the windows. It is “the thermal environment most conducive to learning”—a Nesbitt distinctive.



These schools saved money

Some of the recent low costs
for heating and ventilating:

In Ohio \$1.49 sq. ft.

Bath High School, Lima, Ohio
Architect: Robert A. Helser
Capacity: 550 pupils
Gross area: 37,942 sq. feet
Total contract: \$372,635
Heating and ventilating: \$56,700
Nesbitt Series Hot Water Wind-o-line System
970 feet of pipe trenches and 1,000 feet of
pipe covering eliminated

In Illinois \$1.75 sq. ft.

Rural Street Elementary School
Rockford, Illinois
Architect: Hubbard and Hyland
Engineer: E. R. Gritschke and Assoc.
Capacity: 700 pupils
Gross area: 47,250 sq. feet
Total contract: \$545,713
Heating and ventilating: \$32,826
Nesbitt Series Hot Water Wind-o-line System
1,000 feet of pipe trenches eliminated

In Wisconsin \$1.62 sq. ft.

Mequiock Elementary School
Town of Scott, Wisconsin
Architect: John B. Somerville
Associates, Inc.
Engineer: R. J. Cott
Capacity: 180 pupils
Gross area: 14,420 sq. feet
Total contract: \$163,409
Heating and ventilating: \$23,371
Nesbitt Series Hot Water Wind-o-line System
210 feet of pipe trenches, 120 feet of mains
and piping, 60 feet of pipe covering, and
night controls eliminated

■ ■ ■ The Nesbitt Series Wind-o-line System is an engineering development of John J. Nesbitt, Inc., pioneers in the field of classroom thermal comfort.

No other unit ventilator is equipped to perform as well nor so economically as the Nesbitt Syncretizer; and with Wind-o-line Radiation integrated, the Nesbitt System provides its protected learning environment on the coldest days, even in classrooms with large window walls.

The forced hot water arrangement here described makes it possible for every school to afford and enjoy the unequalled benefits of the Nesbitt System.

Schools in moderate climates where finned radiation is not essential may have the economies of the series piping arrangement through the Nesbitt Mainline System.

Send for the big book, *More learning per school dollar.*



Made and sold by John J. Nesbitt, Inc., Philadelphia 36, Pa.

Sold also by American Blower Corporation
and by American Standard Products (Canada) Ltd.



Denver's Coliseum...

Illustrates Versatility of Concrete for Arena Buildings

Denver's Coliseum is a handsome example of the functional use of concrete for arenas requiring uninterrupted enclosed space with minimum maintenance. Its arched construction requires no supporting pillars and provides a clear and unobstructed view of the entire arena area. Only concrete, the completely plastic building material, can be so molded and formed into any shape with all of its strengthening reinforcement inside.

Throughout the long years of its life, this concrete building will be virtually maintenance-free—a joy both to taxpayers and to spectators who attend the public functions held therein.

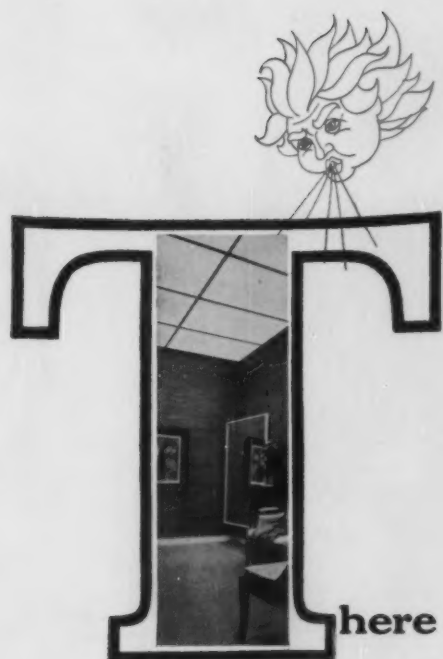


Growing with the Country

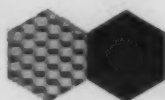
IDEAL CEMENT COMPANY

DENVER, COLORADO

15 Plants and 4 Terminals Serving Some of the Most Rapidly Growing Areas of the Nation



There is only one light diffusing ceiling that actually helps circulate the air from overhead air conditioning and heating systems (it's used solely for this purpose by air cooler manufacturers) yet obscures overhead utility systems (by 45 or 60 degree shielding) while transmitting light with the greatest known efficiency and with the absolute minimum of surface glare....



HONEYLITE®

LIGHT-DIFFUSING ALUMINUM HONEYCOMB

A DEVELOPMENT OF HEXCEL PRODUCTS INC.

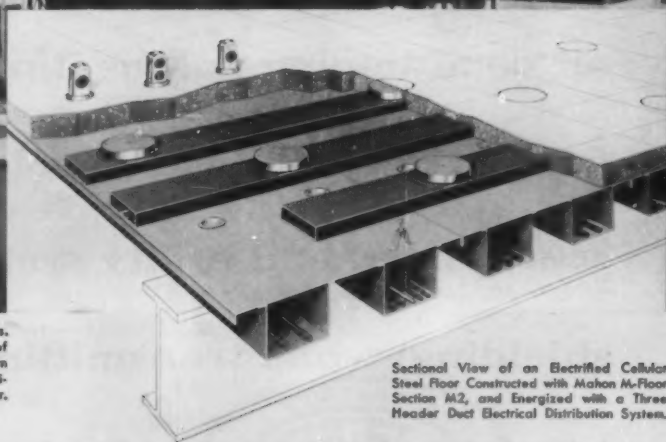
951-61ST STREET, OAKLAND 8, CALIFORNIA

M-FLOORS

Assure Adequate



Sedgewick County Court House and Welfare Building, Wichita, Kansas. 196,000 Sq. Ft. of Mahon M-Floors and 15,000 Sq. Ft. of Mahon Steel Roof Deck will provide the Electrified Sub-Floors and the Roof of this modern building. Thome-Harris-Colvin & Associates, Architects. G. Hartwell & Associates, Structural and Consulting Engineers. Martin K. Eby, General Contractor.

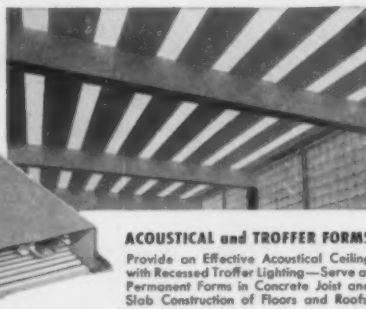


Sectional View of an Electrified Cellular Steel Floor Constructed with Mahon M-Floor Section #12, and Energized with a Three Header Deck Electrical Distribution System.



LONG SPAN M-DECKS

M-Decks Span from Wall to Wall or Truss to Truss—Provide Combined Structural Roof and Acoustical Ceiling. Recessed Troffer Lighting may also be included.



ACOUSTICAL and TROFFER FORMS

Provide an Effective Acoustical Ceiling with Recessed Troffer Lighting—Serve as Permanent Forms in Concrete Joist and Slab Construction of Floors and Roofs.



CONCRETE FLOOR FORMS

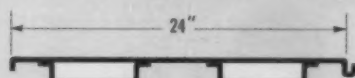
Mahon Permanent Concrete Floor Forms in various types meet virtually any requirement in concrete floor slab construction over structural steel framing.

Built-In Electrical Raceway Capacity in New County Court House and Welfare Building!

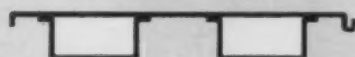
MAHON

M-FLOOR SECTIONS

CEL-BEAMS, WHICH ARE UTILIZED AS ELECTRICAL RACEWAYS, ARE 6" WIDE



SECTION M2-1.5
CEL-BEAM DEPTH 1 1/2"



SECTION M2-3
CEL-BEAM DEPTH 3"



SECTION M2-4.5
CEL-BEAM DEPTH 4 1/2"



SECTION M2-6
CEL-BEAM DEPTH 6"



SECTION M2-7.5
CEL-BEAM DEPTH 7 1/2"

In the twelve-story County Court House and Welfare Building, illustrated at the left, Mahon M-Floors will provide the light weight structural sub-floors and the built-in electrical raceways so necessary in modern office buildings today. Through his selection of M-Floors for this impressive building, the architect assured himself and the using agencies of all-over electrical availability, year-after-year electrical convenience, and adequate raceway capacity to meet any electrical demands in future years.

The 6" wide Cel-Beam Raceways in M-Floor Construction provide further electrical advantages . . . they allow greater latitude in the location and installation of Floor Service Fittings, and they permit the use of 4" diameter Hand-holes between Electrical Header Duct Access Units and the Cel-Beam Raceways. This is important . . . the larger access hand-holes save time and labor costs, not only in the initial electrical installation, but year after year, whenever changes in electrical circuits are required or additional circuits become necessary.

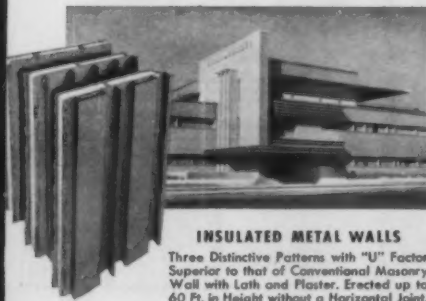
In the M-Floor Cel-Beam Section you get a better balanced, more efficient structural unit . . . you get electrical availability in every square foot of floor surface . . . you get greater raceway capacity, greater latitude in location of floor service fittings, and greater convenience, electrically, for the life of the building.

When you select an Electrified Cellular Steel Sub-Floor for your next building, you will want all of the structural and electrical advantages that have been engineered into Mahon M-Floors. Comparison will convince you that the basic functional requisites of a Cellular Steel Sub-Floor are more fully realized in the design of Mahon M-Floor Cel-Beam Sections.

See Sweet's Files for information, or write for Catalogue M-58.

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INSULATED METAL WALLS

Three Distinctive Patterns with "U" Factor Superior to that of Conventional Masonry Wall with Lath and Plaster. Erected up to 60 Ft. in Height without a Horizontal Joint.



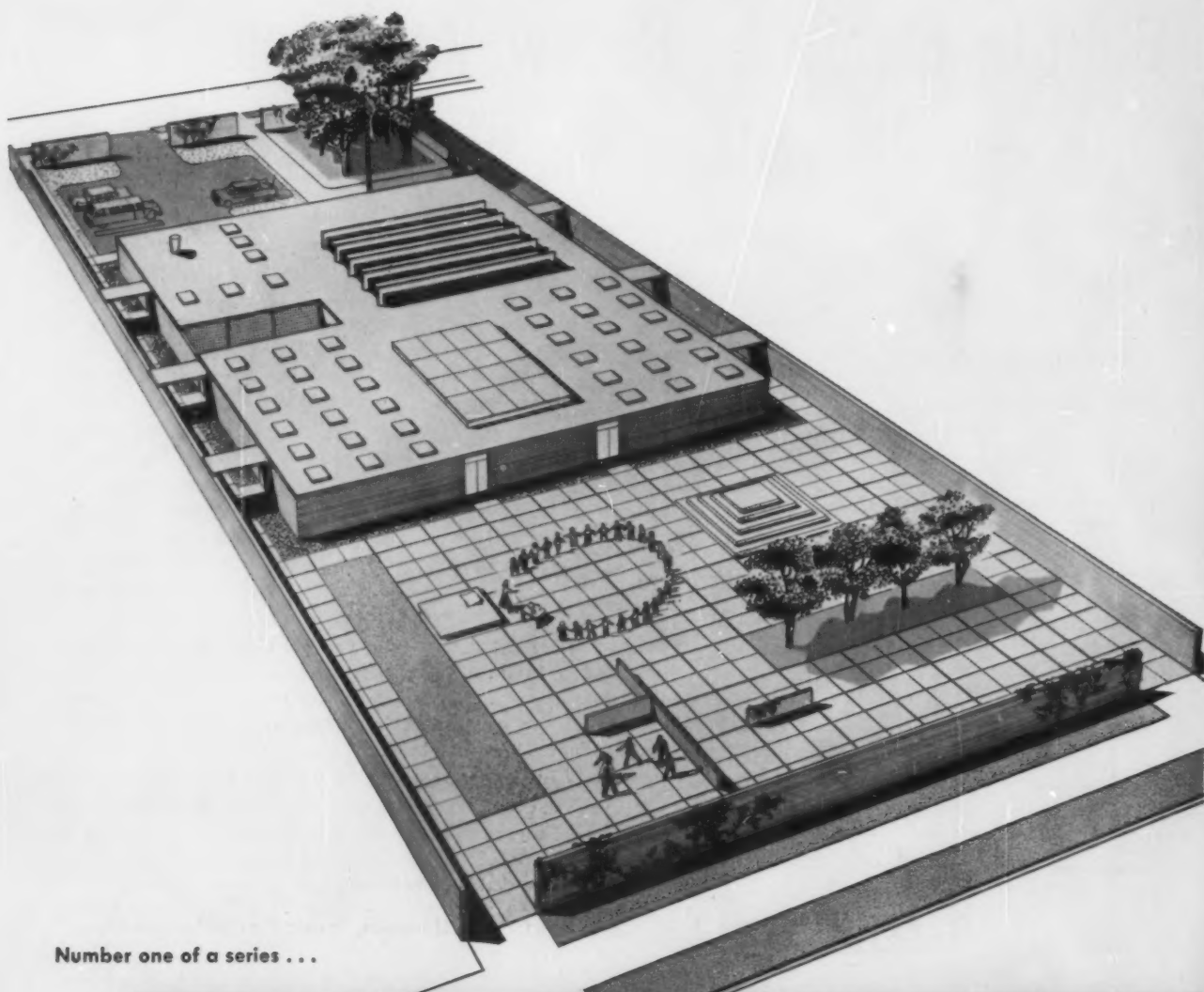
UNDERWRITERS' RATED FIRE WALLS

Mahon Metalclad Fire Walls carry two Hour Rating by Underwriters' Laboratories, Inc., for Use as Either an Interior Dividing Fire Wall or an Exterior Curtain-Type Fire Wall.



ROLLING STEEL DOORS

Standard Manually, Mechanically or Power Operated Rolling Steel Doors and Grilles. Underwriters' Labeled Automatic Closing Rolling Steel Fire Doors and Fire Shutters.



Number one of a series . . .

The herman nelson file of

CLASSROOM AIR CONDITIONING, more and more, is becoming a basic factor in school design. Architects everywhere are recognizing the trend in their structural considerations for school buildings.

Educators, too, are thinking—talking—stressing air conditioning. They have found that classroom temperature, air movement and humidity have a direct bearing on learning and development. They realize that it is just as important that a child be com-

fortable in hot weather as it is in wintertime.

For these reasons, many schools are already air conditioned, or are planning for it in the future. Throughout the country, the need for air conditioning is being reflected again and again in basic school design. The building plan shown on these pages is an outstanding example.

Does the school you are planning include eventual air conditioning? Think it over. Chances are—it should.

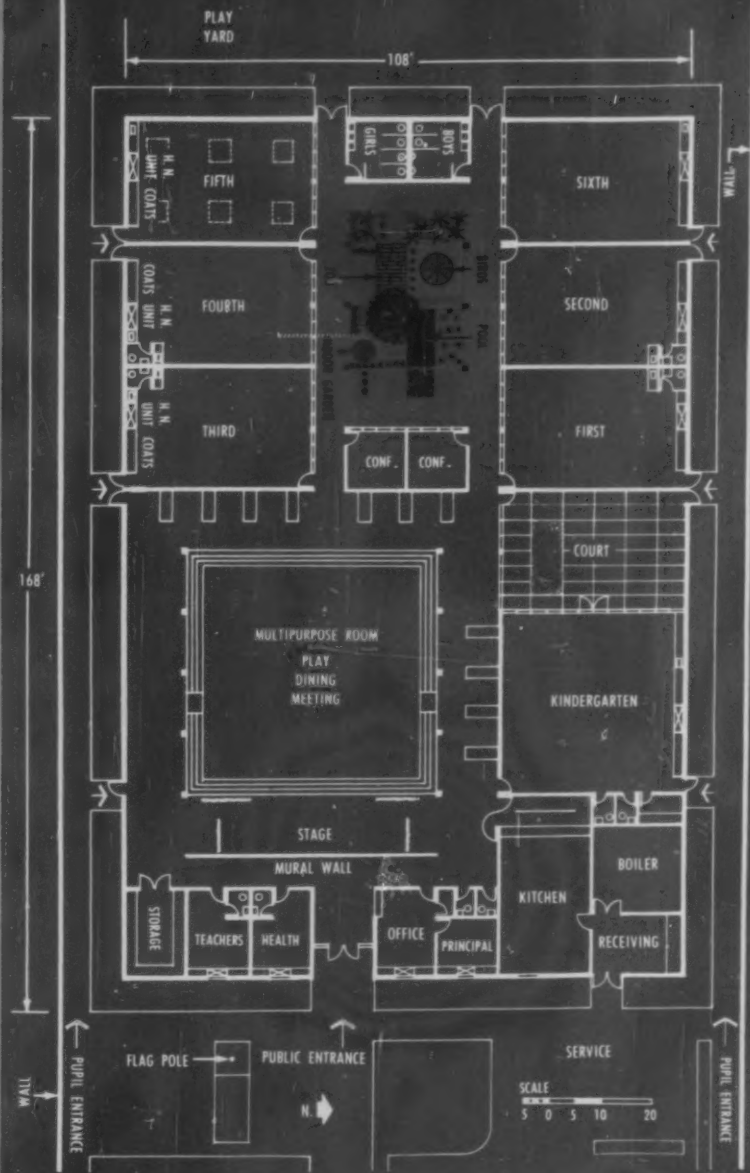


**Hellmuth, Obata & Kassabaum
designs air conditioned school
with the "inward" look**

Air conditioning solved the problem of an extremely restricted school site in the middle of a city block for Hellmuth, Obata and Kassabaum, St. Louis architects. In designing this proposed elementary school for kindergarten through sixth grade, they have made telling use of air conditioning as the key to the solution. By treating it as an integral part of the design, they have created a bright, charming educational world-within-a-world for a typical drab city neighborhood.

The entire site is enclosed in a solid masonry wall. The school turns inward and makes its own controlled environment of indoor-outdoor space. Except for the office rooms overlooking the open fore-court, the school has no windows onto the exterior. Instead, each grade classroom has a glass wall opening onto a roofed interior garden, which, like the rooms themselves, is liberally provided with skylights of heat-rejecting glass blocks.

The garden, in addition to giving the sense of space and nature within the building itself, is also designed to be used as an active teaching area, equipped with small animal cages, a fish pond and bird cages as well as plants



air conditioned school design

and flowers. The kindergarten room opens onto its own private outdoor courtyard.

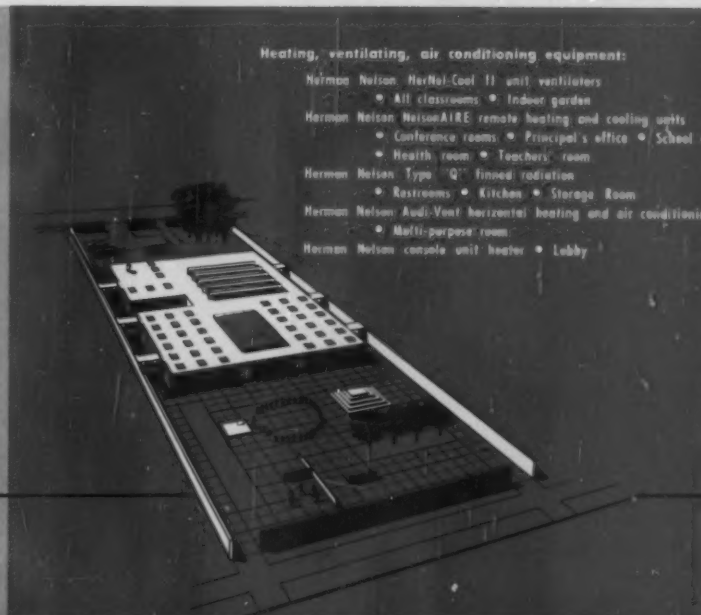
In addition to these features, the plan also includes such approved amenities as separate entrances for each classroom, a multi-purpose room with dropped center area and raised roof to increase flexibility of functions and efficient grouping of administrative and service areas. Structural system and materials were carefully developed to provide maximum efficiency of air conditioning.

AAE

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Heating, ventilating, air conditioning equipment:

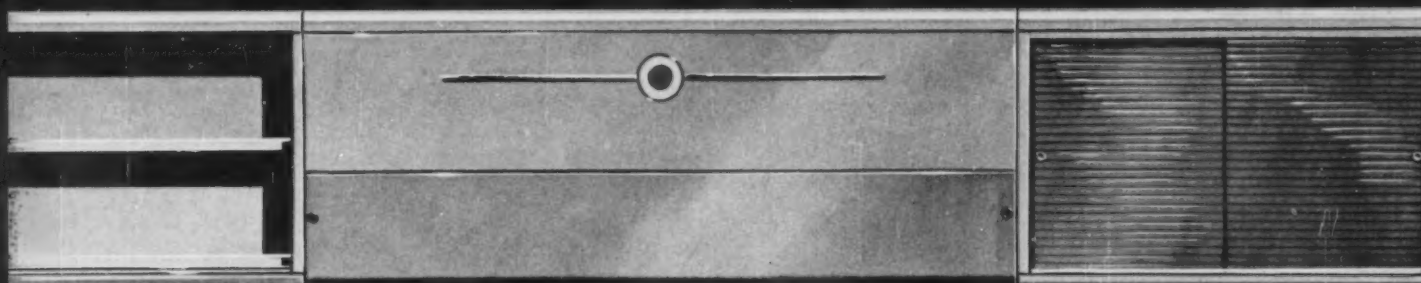
- Herman Nelson Her(Nal)-Cool II unit ventilators
 - All classrooms • Indoor garden
- Herman Nelson NelsonAIRE remote heating and cooling units
 - Conference rooms • Principal's office • School office
 - Health room • Teachers' room
- Herman Nelson Type "Q" finned radiation
 - Restrooms • Kitchen • Storage Room
- Herman Nelson Audi-Vent horizontal heating and air conditioning units
 - Multi-purpose room
- Herman Nelson console unit heater • Lobby



hermel-cool/II

UNIT VENTILATOR

with optional air conditioning



already selected by more than 100 schools

Will the school you are planning ever need air conditioning? The answer is definitely—yes. Architects and educators agree on the importance of the proper learning environment. And only air conditioning can assure that your school will have it when the weather outside is warm.

That's why today—less than a year after its introduction—the HerNel-Cool II unit ventilator with optional air conditioning has been selected for use in more than 100 schools, which are either air conditioned now or have planned for it.

HerNel-Cool II is the first unit ventilator to offer optional air conditioning, as well as heating, ventilating and natural cooling (with outside air). Units can be installed so the school enjoys the usual bene-

fits of Herman Nelson unit ventilation, including the famous DRAFT|STOP system—the only type of draft control that is compatible with air conditioning. Then at any time—immediately, or whenever the school budget will allow it—the mere addition of a chiller in the boiler room is all that is needed for complete hot weather air conditioning.

This can be accomplished without disruption of classroom activities . . . without expensive alteration and installation charges. The cost is far less than for separate heating and air conditioning systems—both for installation and operation.

Want information? Write today to Herman Nelson Unit Ventilator Products, American Air Filter Company, Inc., 215 Central Ave., Louisville 8, Ky.



AAT

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UNIT VENTILATOR PRODUCTS

System of Classroom Cooling, Heating and Ventilating

INSTALL NOW—AIR CONDITION LATER! It's completely practical in any school with HerNel-Cool II unit ventilators. Here's how the system works:

HerNel-Cool II units provide individual temperature control for each classroom, automatically. Most of the year they provide heat, ventilation, or natural cooling (with outside air) as the room requires. Whenever a chiller is installed in the boiler room, HerNel-Cool II units also function as air conditioning units.

In hot weather, HerNel-Cool II units switch automatically to mechanical cooling, with chilled water circulating in the same piping that carries hot water during cold weather. Complete window downdraft protection is provided under all conditions—because Herman Nelson DRAFTSTOP does not depend on heat for draft protection.

Some schools which have already specified Herman Nelson unit ventilators for heating, ventilating, natural cooling and immediate or eventual air conditioning, include:

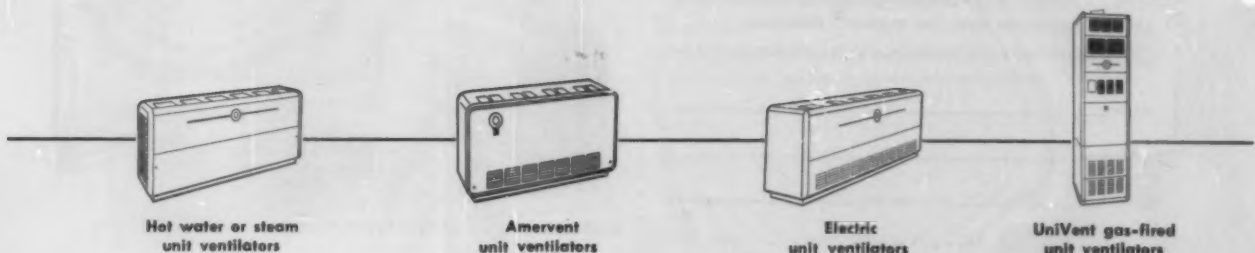
Pleasant Hill School, Austin, Texas • Wilmot School, Wilmot, Wisconsin • Niles Township High School, Skokie, Illinois • South High School, Bakersfield, California • Morrillton Elementary School, Morrillton, Arkansas • Sierra Joint Union High School, Auberry, California • Immaculate Heart of Mary Parish, Chicago, Illinois • New Science Building, Northeastern State College, Tahlequah, Oklahoma • South Union Junior High School, Fresno, California • Davy Crockett School, Phoenix, Arizona • Mockingbird Road Elementary School, Vero Beach, Florida • Administration & Educational Building, Buena Vista College, Storm Lake, Iowa • Purdue University, West Lafayette, Indiana • William S. Speed Building, University of Louisville, Louisville, Kentucky • Lodi High School, Lodi, California • McKinley School, Bakersfield, California • St. John the Baptist School, Chico, California • St. Monica's Church and School, Dallas, Texas • Southeastern College, Hammond, Louisiana.

Cost studies—for schools employing immediate air conditioning as well as for those which are planning for its installation later—are available upon request.

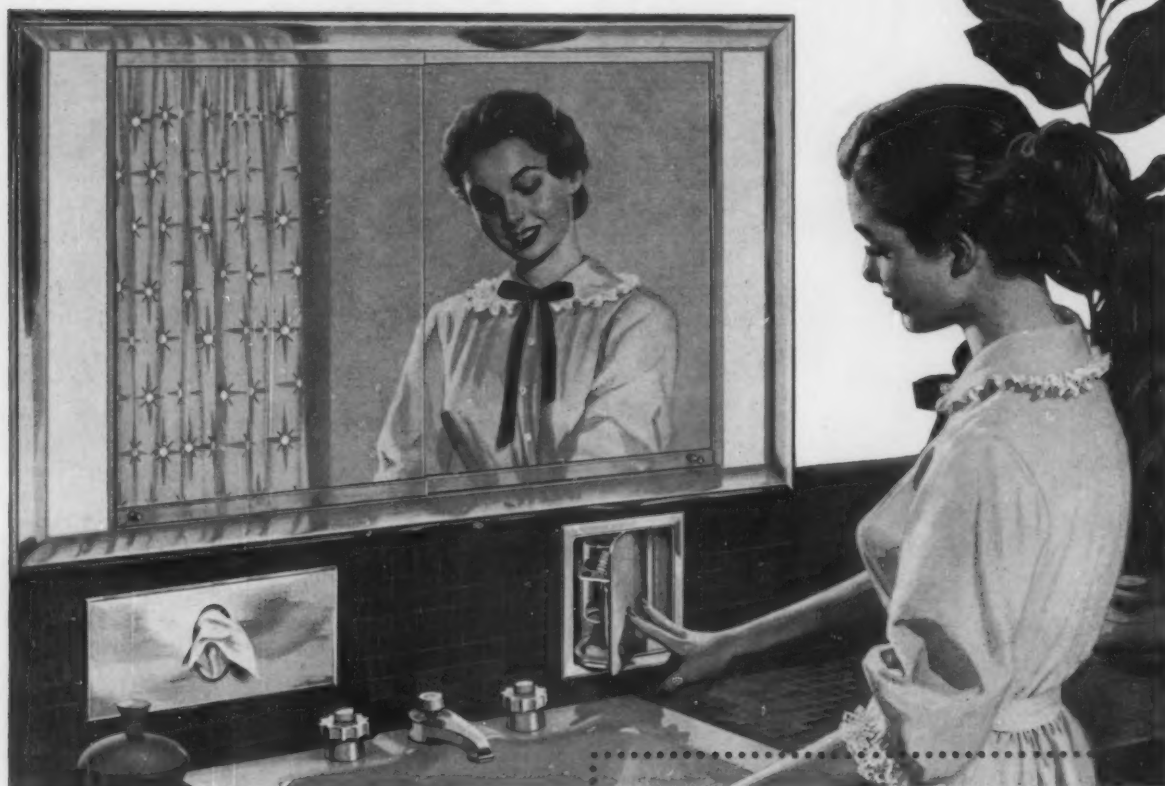
Get all the facts now. Classroom air conditioning—immediate or eventual—is being included in more and more school planning. You'll want to consider it in yours. Write today to Herman Nelson Unit Ventilator Products, American Air Filter Company, Inc., 215 Central Avenue, Louisville 8, Kentucky.



HerNel-Cool II units are as attractive as they are efficient—they harmonize with any classroom color scheme. Choice of seven standard colors. Five durable, decorative laminated plastic top patterns. Matching utility cabinets and other accessories.



Add to the beauty and liveability of your bathroom



Inch for inch, the bathroom gets more hard wear than any room in the house. Making it into a showplace and keeping it that way requires more than good intentions. That's why so many architects, builders, and homemakers specify Hall-Mack Accessories. They know these quality fixtures retain deep, gleaming beauty under rugged usage. And they recognize at a glance the highly original ideas that make these accessories *extra* convenient for family and friends. Skillfully designed to blend with any decor, these famed accessories combine sparkling beauty and unusual utility to add real livability to this important room. Hall-Mack Accessories . . . first choice far and away.

HALL-MACK®

bathroom accessories in sparkling *chrome*

HALL-MACK COMPANY Division of **TEXTRON INC.**
1380 W. Washington Blvd., Los Angeles 7, California

☐ Please send your **FREE** color booklet of new bathroom ideas

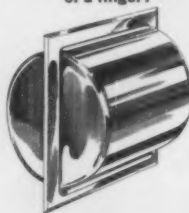
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ADDRESS _____

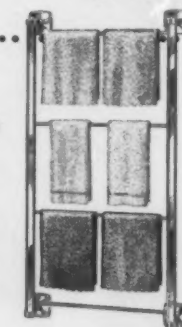
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AR-1

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Toilet Paper Holder is
recessed — has a gleaming
chrome cover that
lifts at the touch
of a finger!

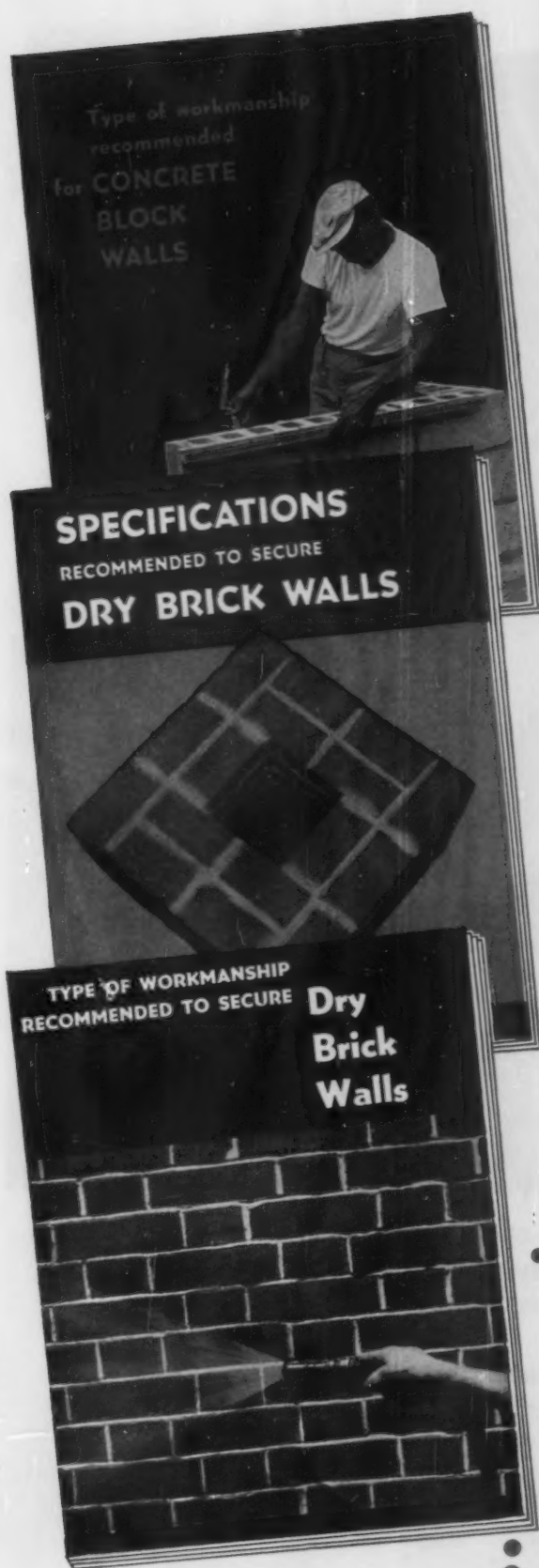


New chrome plated
Shower Recess Unit —
handy, safe spot for
shampoo bottles, etc.



New chrome Towel Ladder
gives extra towel space
so often needed.

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GET THESE IMPORTANT BOOKS!

THE three books at the left are a "must" for anyone who is interested in good masonry construction. One describes the type of *workmanship* recommended to secure dry brick walls. The second describes the *specifications* recommended to secure dry brick walls. The third describes the type of workmanship recommended for *good concrete-block walls*.

Each of these books has been endorsed by foremost authorities. Each has received a citation of merit from the Producers' Council and the American Institute of Architects. Each is fully illustrated, clearly written. Each contains a wealth of really valuable information.

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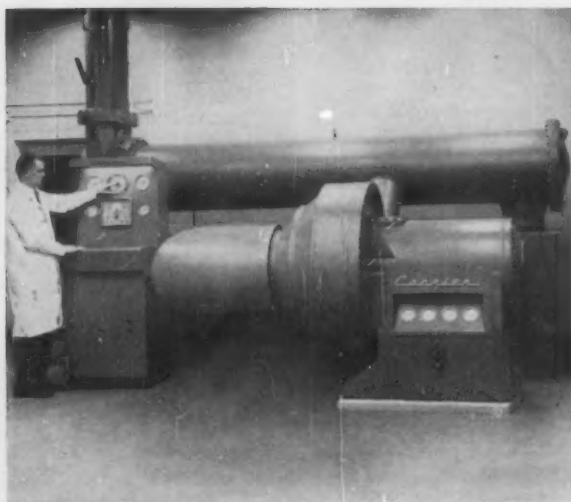
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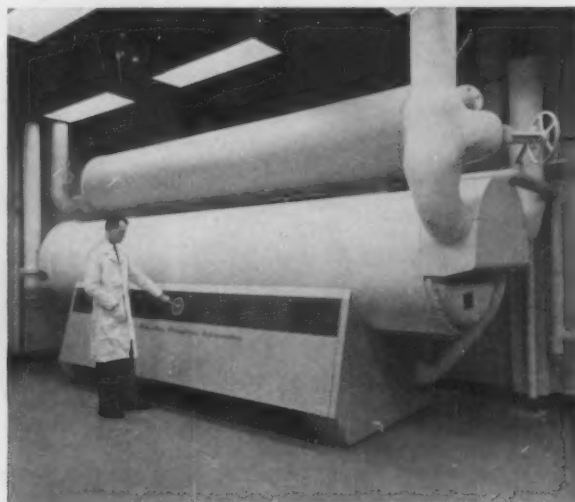
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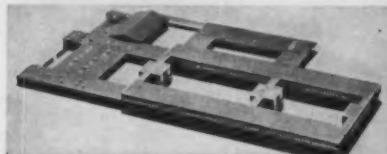
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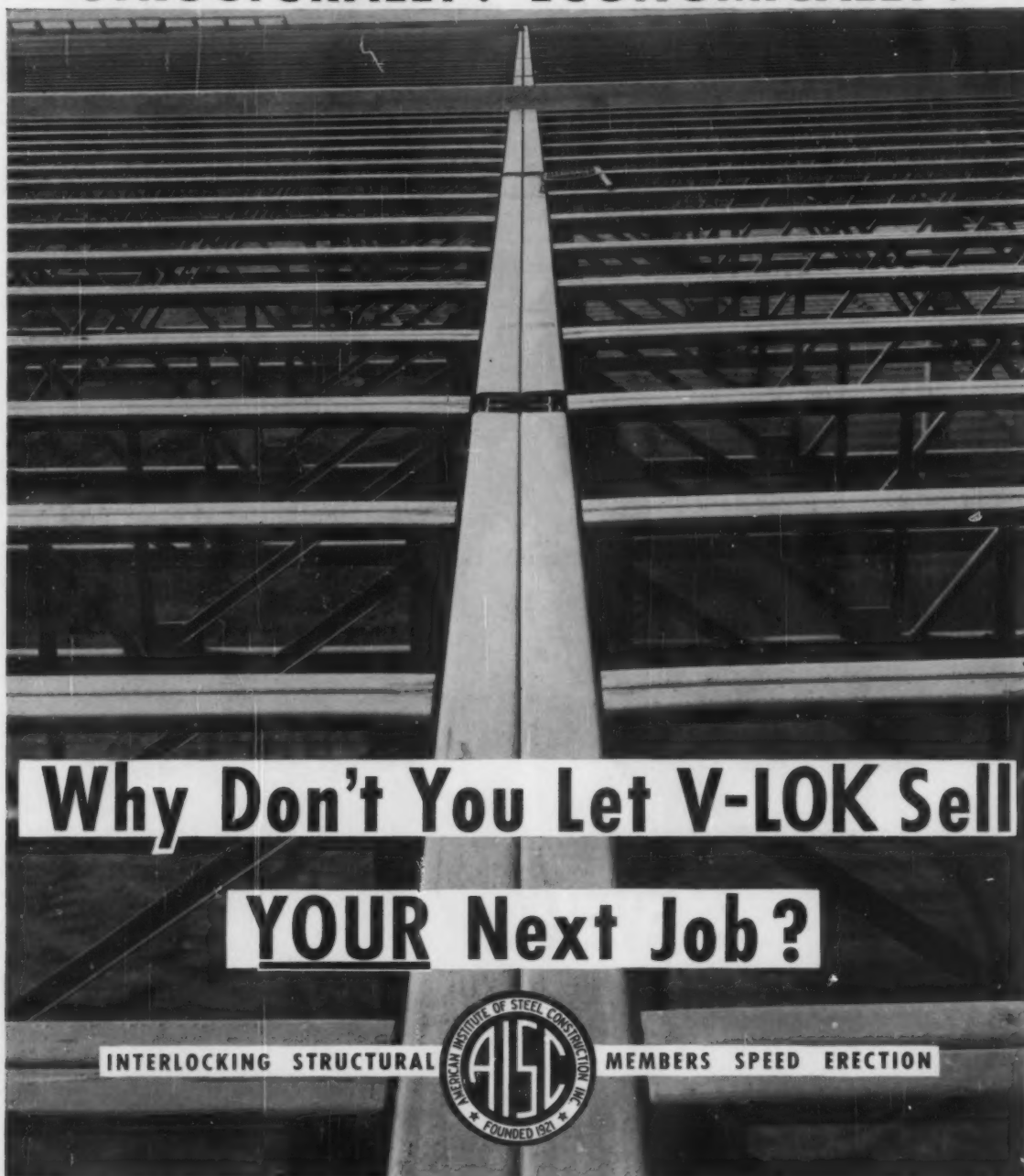
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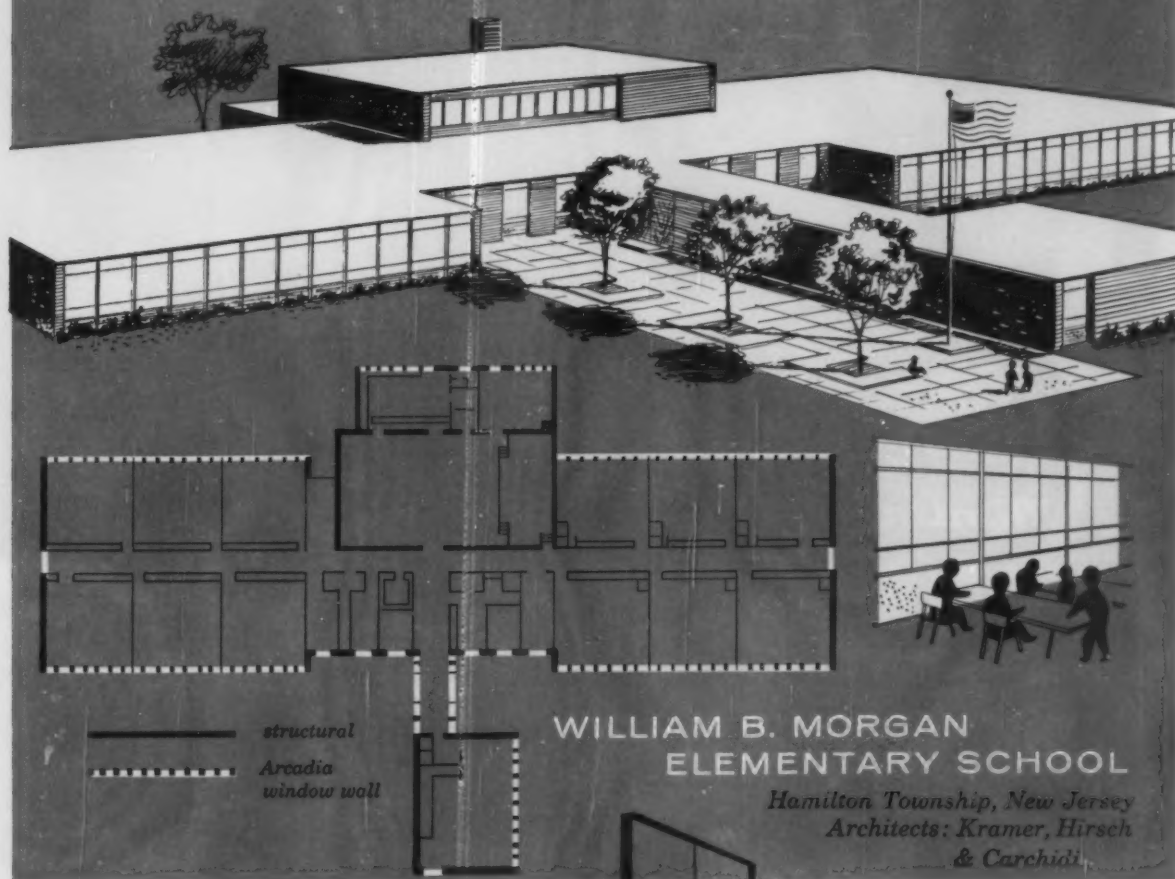
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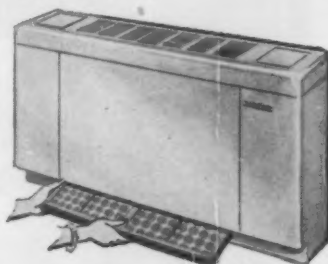
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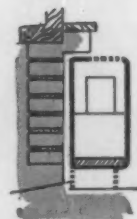
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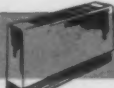
A-1342



AIRditioners



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Cabinet units



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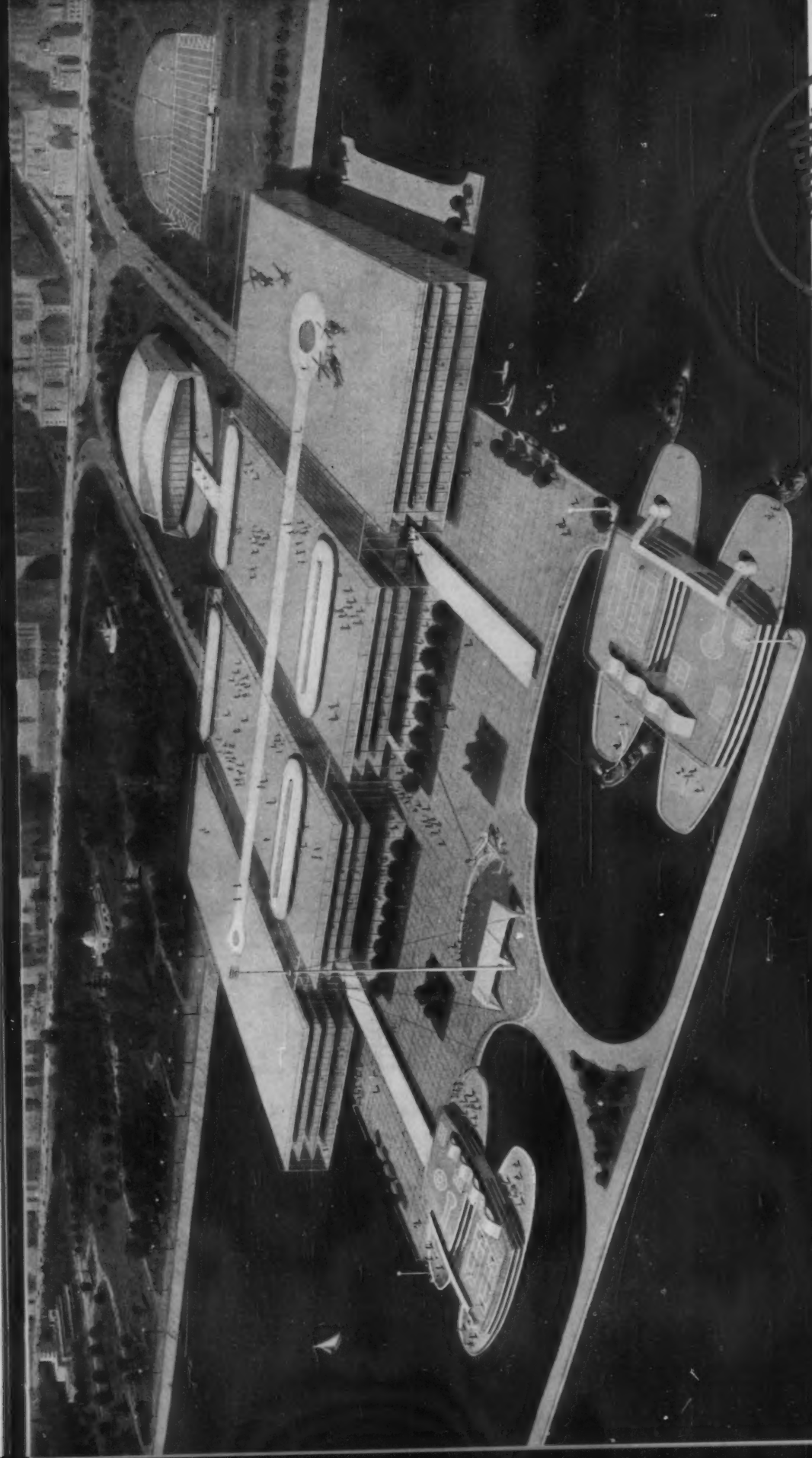
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Automatic Louver-Lens

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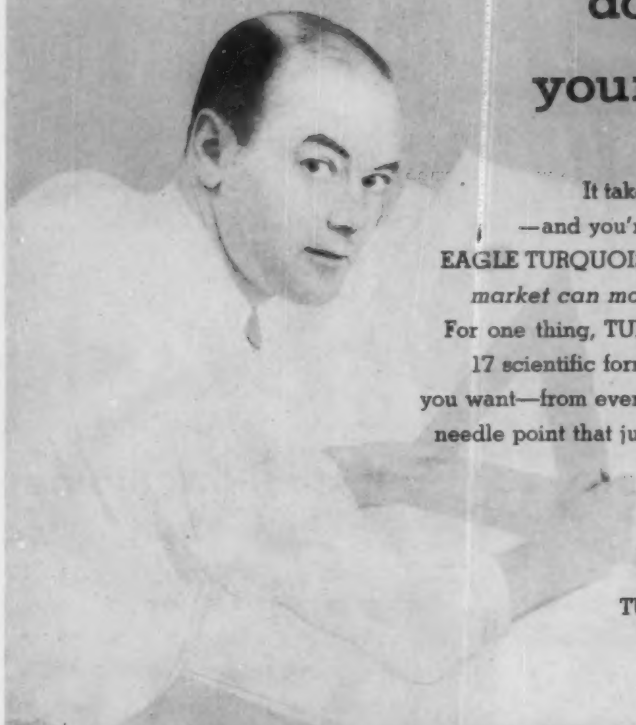


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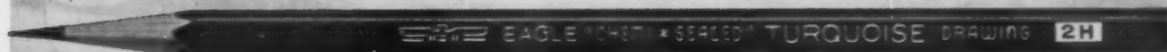
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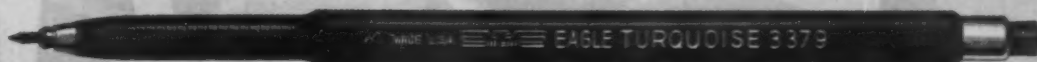
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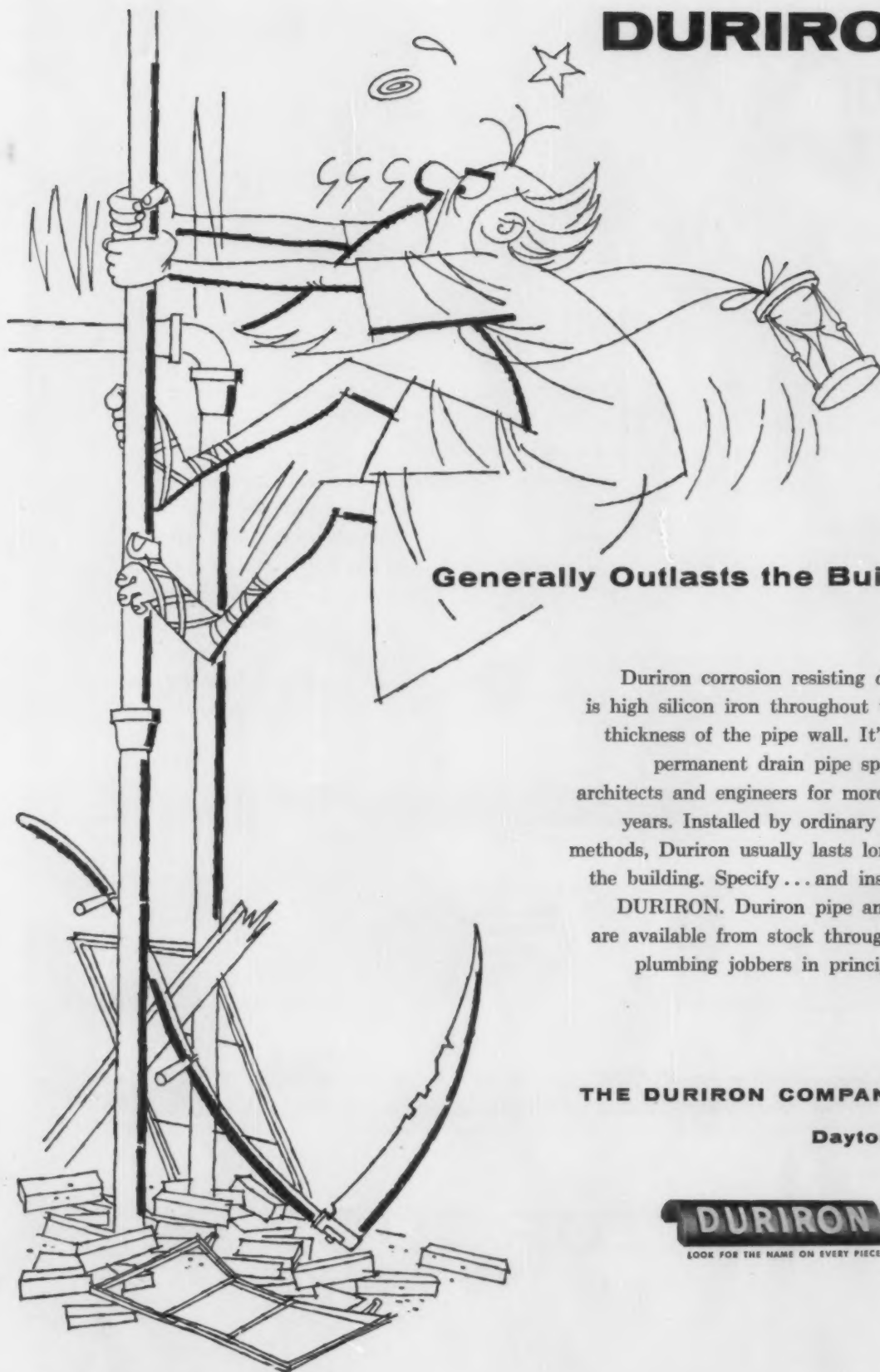
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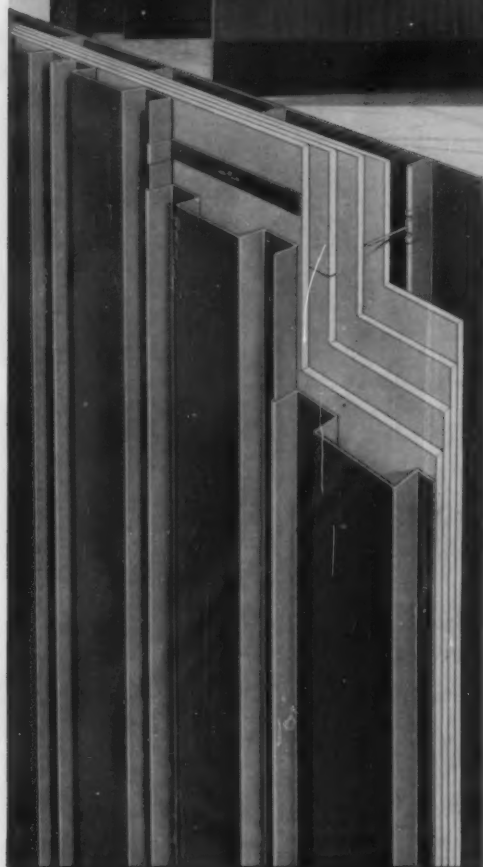
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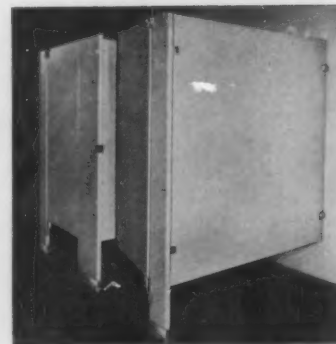
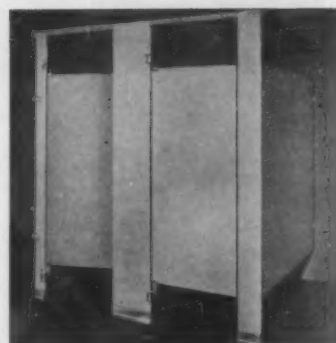
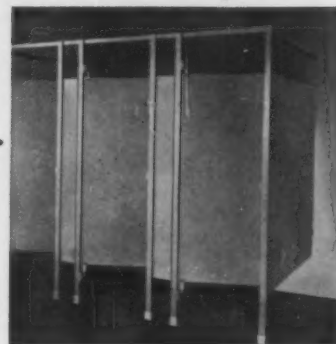
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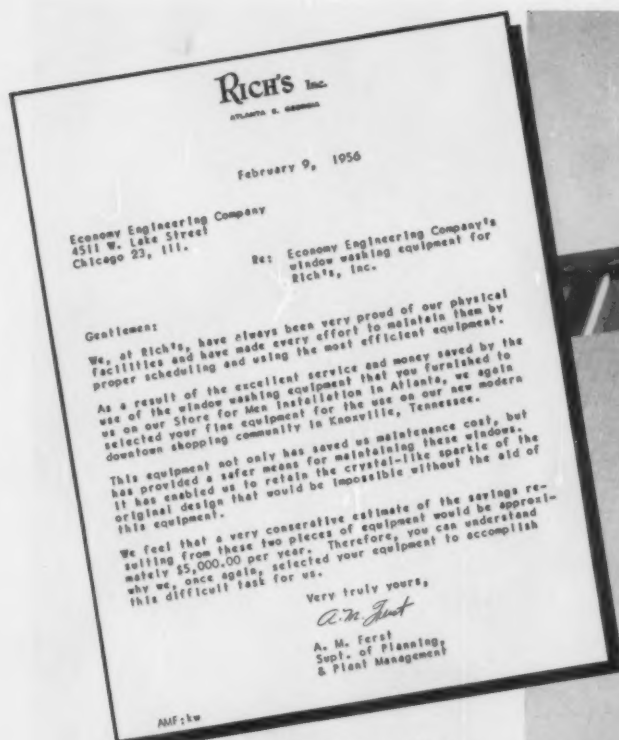
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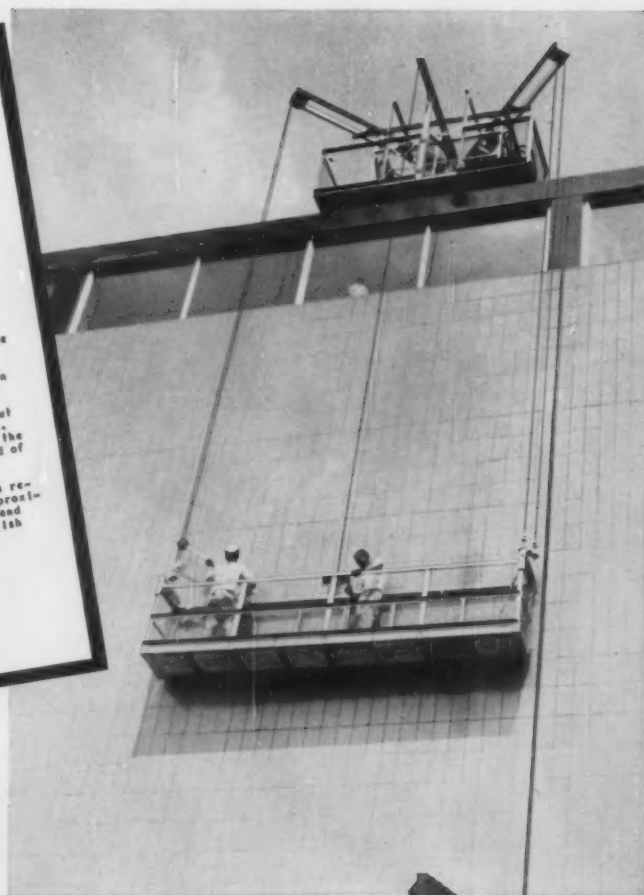
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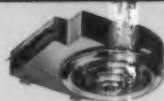
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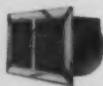
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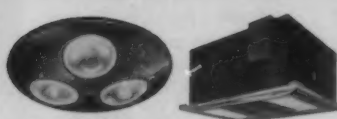
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Architect: **L. Rossetti**

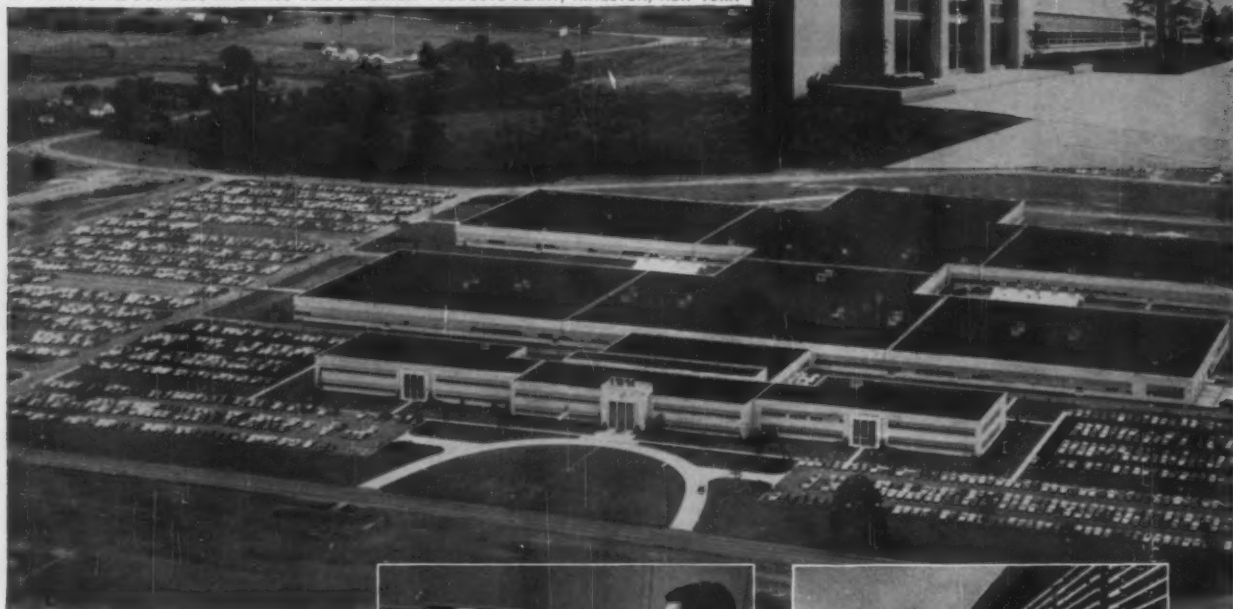
Engineers: **R. F. Giffels and V. E. Vallet, Detroit, Mich.**

Contractors for heating and air conditioning:

Rowland Tompkins & Sons, Hawthorne, N. Y.

Carrier Corporation, New York City—subcontractor

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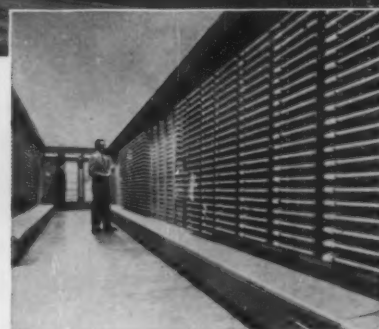


Focal point of the SAGE Air Defense System is the round scope portion of Display Console shown in photo at right. It can depict the over-all battle or focus on part of it.

Powers Precision Control of Temperature and Humidity is important in all spaces shown here at the IBM Kingston Plant



One of the SAGE Air Defense System Display Consoles.



Input frames (front view) thru which all radar information is processed.

View of Pluggable Unit Assembly department.



One of many Quality Control areas.



View of Manufacturing-Engineering department.



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Accurate control of temperature and humidity by Powers in this completely air-conditioned plant helps employees **THINK** better and produce better quality products. Central Fan Systems supply proper year 'round conditioned air for the varied types of activity in these

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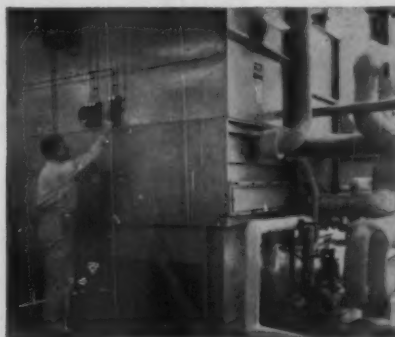


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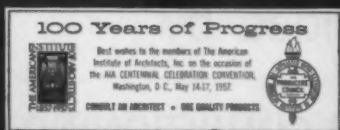
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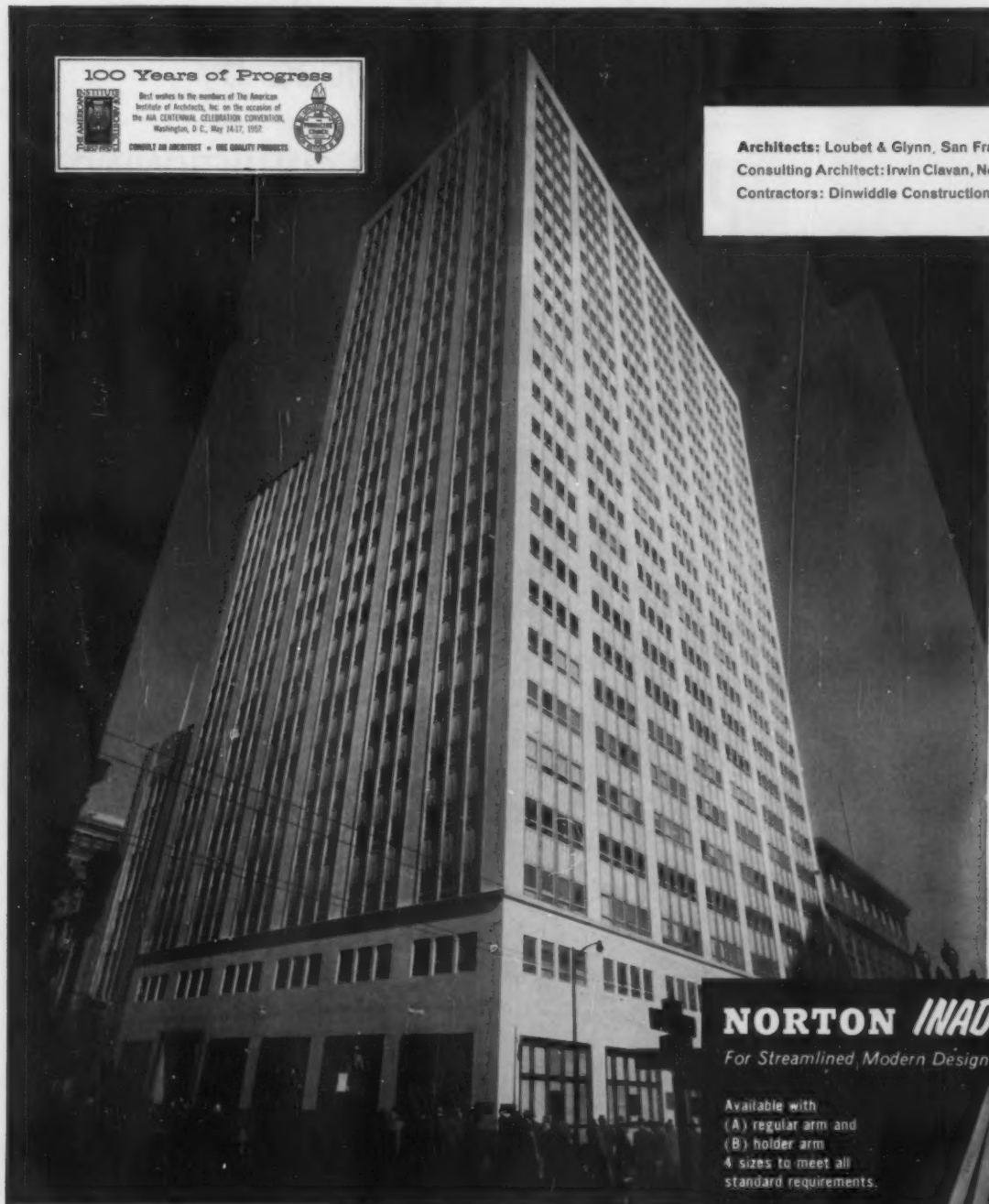
In 4 special SAGE Computer test areas are dehumidifiers (above), a central control panel (right), and dry air coolers (left). On the latter, fluid drive variable speed control is operated by a 6" Powerstroke motor controlled by Powers Static Pressure Regulator and Submaster K Thermostat.

(C-57)

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Here's an excellent example of how closely Cupples works with architects and builders. The curtain wall system for this handsome twelve-story structure was designed completely by the architects. Cupples followed the specifications with no variations.

Extruded aluminum fascia over spandrel beams with heavy aluminum I Beams forms the exterior line. Specially designed fixed windows are set back five feet from fascia. Two top-hinged, in-swinging windows on each floor permit egress for window cleaners. Top floor is screened by dark gray aluminited extrusions, running behind vertical aluminum I Beams. Balance of aluminum work is plain aluminite finish.

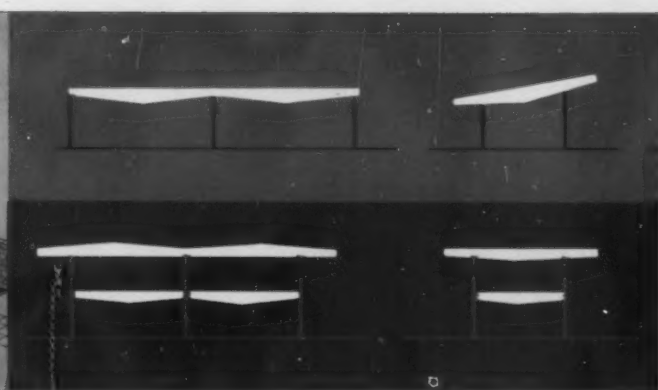
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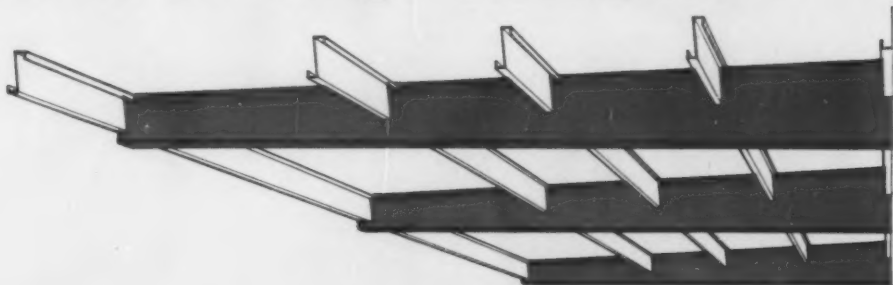


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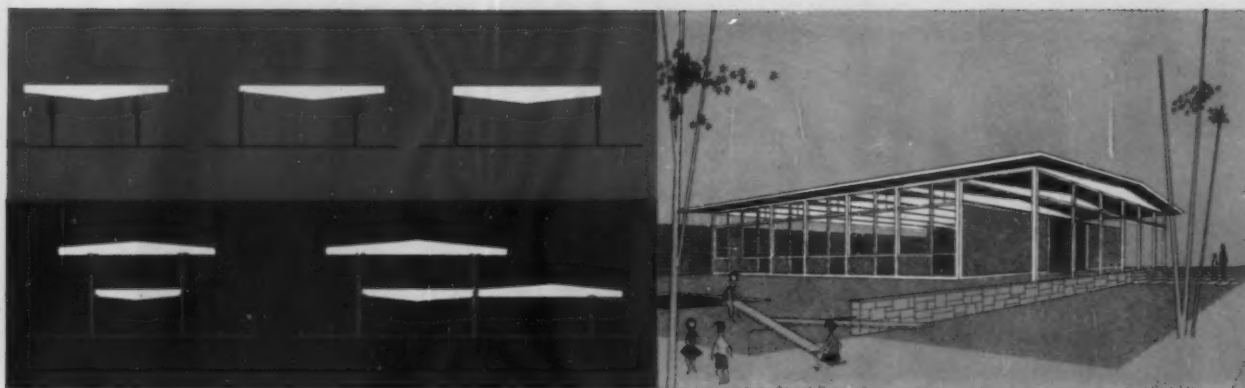
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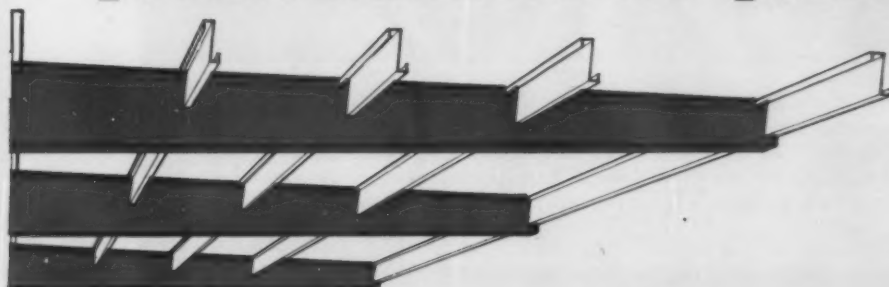
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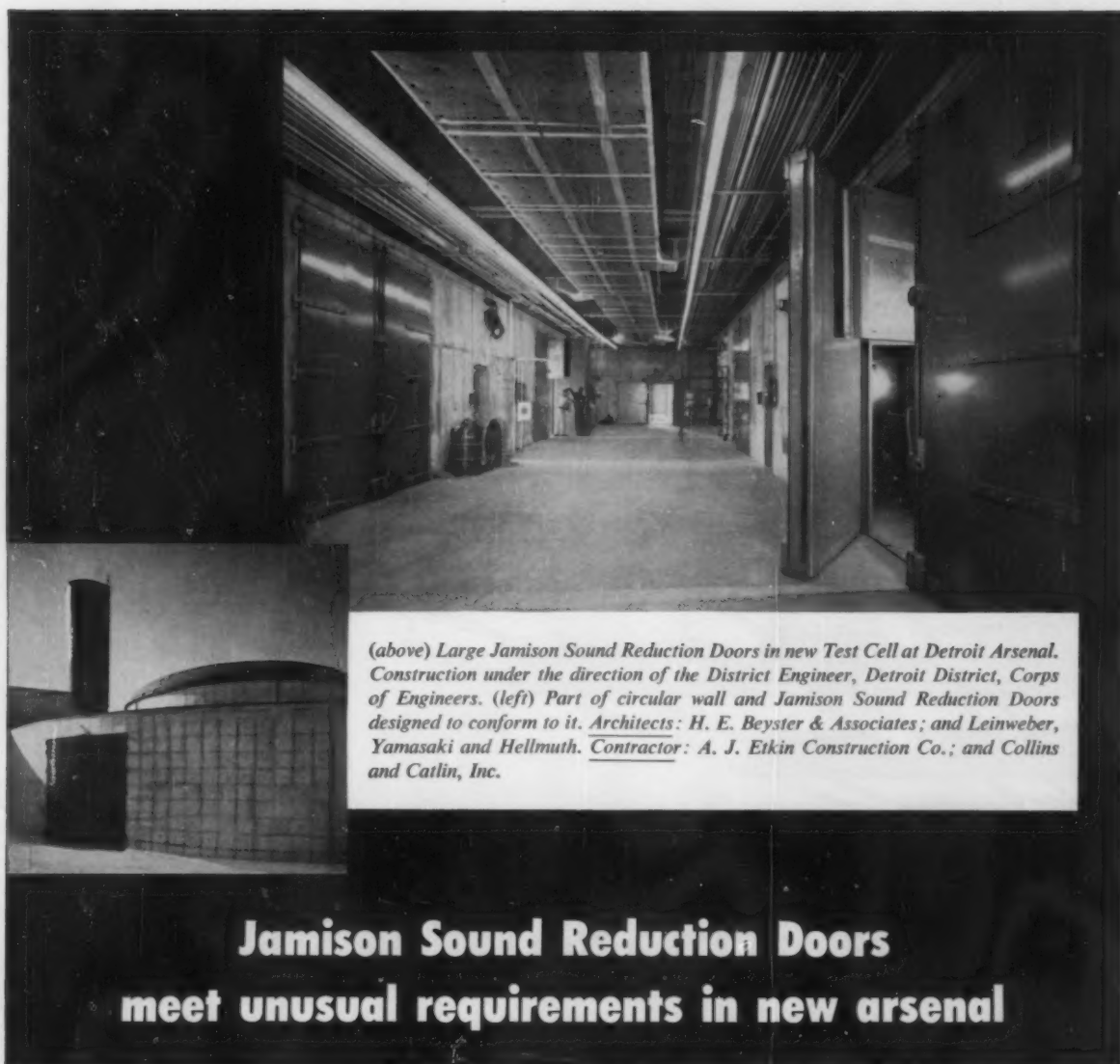
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(above) Large Jamison Sound Reduction Doors in new Test Cell at Detroit Arsenal. Construction under the direction of the District Engineer, Detroit District, Corps of Engineers. (left) Part of circular wall and Jamison Sound Reduction Doors designed to conform to it. Architects: H. E. Beyster & Associates; and Leinweber, Yamasaki and Hellmuth. Contractor: A. J. Etkin Construction Co.; and Collins and Catlin, Inc.

Jamison Sound Reduction Doors meet unusual requirements in new arsenal

...special design fits curved wall; doors reduce sound, resist pressure and temperature

Once again the effective stopping power of Jamison Sound Reduction Doors is being demonstrated in the new Laboratory and Test Cell of the Detroit Arsenal. Here 22 sound reduction doors are in operation, and an additional 38 Jamison Sound Reduction Doors designed to operate under specific heat and pressure conditions.

After years of study and research on the myriad problems of unwanted noise, Jamison engineers developed the "Mass Principle" to effectively minimize sound transmission through a structure. This same principle, with certain refinements, is being used today in doors that are specified again and again by airlines, engine manufacturers and the military services.

If your noise problem ranges from a quiet room or TV studio to a test cell for a 23,000 pound jet engine, come to Jamison for authoritative analysis and help. Write today for new bulletin to Sound Reduction Door Division, Jamison Cold Storage Door Co., Hagerstown, Md., U.S.A.

For 50 years the leading builder of cold storage doors

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ENGINEERED DOORS

Announcing a promotion

a promotion designed to focus the attention of prospective home builders and homeowners on the importance of color and design in bathrooms...

dream of an Eljer bathroom CONSUMER CONTEST

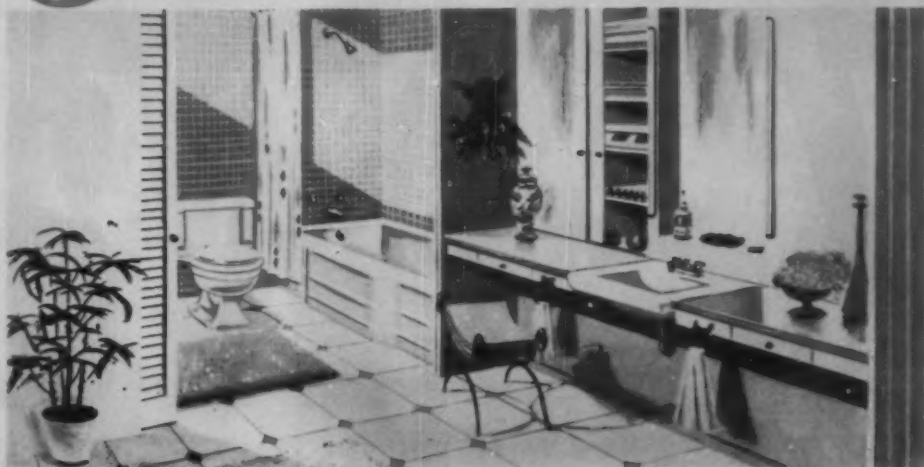
Get your official entry form by going or writing to the Eljer Plumber displaying this sign



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in prizes just for dreaming of an Eljer bathroom

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An Eljer dream bathroom
...plus an exciting vacation trip

100 BIG PRIZES

FIRST PRIZE—your dream bathroom with a value up to \$4000 built in your home exactly as you designed it. Plus two weeks for two in glamorous Hawaii with all expenses paid.

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SEVEN-SIXTH PRIZES—Easy Combomatic Washer Dryers each valued at over \$500.

SEVEN-SIXTH PRIZES—cash awards of \$100 in cash and fifty of \$50 in cash.

PLAN NOW TO BE A WINNER...



Have you ever dreamed about a beautiful new bathroom... designed just the way you want it... with gleaming modern Eljer fixtures... stylish, spacious cabinets... soft-toned colors and subdued lighting? A dream bathroom... one that marks your home with distinctive good taste... a bathroom that reflects your own personality... a gracious Eljer bathroom.

Now this dream can come magnificently alive. All you have to do is put your dreams down on paper. If your simple sketch and statement are selected as the winner, Eljer will build your bathroom for you... exactly the way you dreamed it.

How to enter... Send in or buy any of the many Eljer products listed in this column on the left of this ad and obtain an official entry form. Then, fill out a statement for consideration, making helpful suggestions and complete plans. Or, if you prefer, write to Eljer Division of The Murray Corporation of America, Three Gateway Center, Pittsburgh 22, Pa.

ELJER

or write Advertising Department
Eljer Division
Three Gateway Center
Pittsburgh 22, Pennsylvania

This first big national contest ever designed to point directly to the convenience and beauty that can be enjoyed when bathrooms are correctly styled to appeal to today's home-makers has already awakened tremendous interest in the industry.

It is another Eljer contribution to stimulate widespread interest in home modernization and properly designed new homes. Eljer Division of The Murray Corporation of America, Three Gateway Center, Pittsburgh, Pennsylvania.

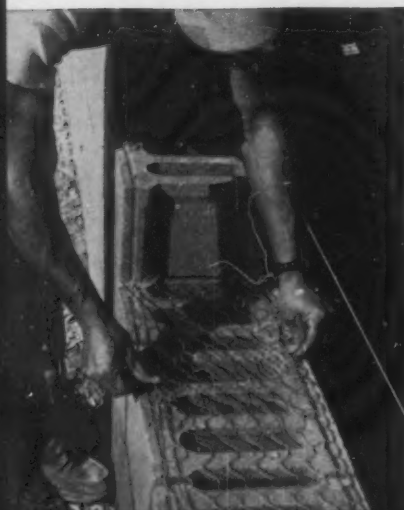
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KEYWALL

Galvanized

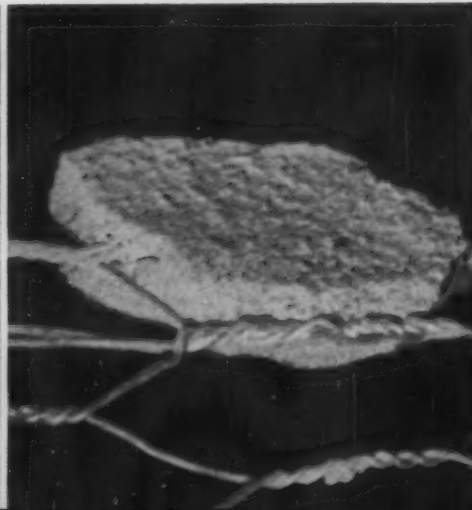
Masonry Reinforcement



"I have no problem getting masons to lap KEYWALL. I prefer a 2-foot lap. When it's lapped, it doesn't interfere with the embedment. Yet it gives the full reinforcement value of continuous wire," Mr. Gans points out.



Wherever walls intersect, Mr. Gans uses KEYWALL to tie them together. "It is easy to place in alternate joints as shown," he explains. "And KEYWALL bends out of the way, removes the hazard of projecting rods or wires."



"Reinforcement is only as good as its bond. This section of joint shows how KEYWALL is fully embedded in the mortar to provide an exceptional bond. Actually, the hexagon mesh becomes locked into the mortar," says Mr. Gans.



Note the full embedment of the face shell of these units. KEYWALL helps hold mortar in place, giving a stronger, more weather-tight wall.

When a 2-day-old course of masonry was removed from the wall this section of five units came out in one piece. The load of this beam is carried by the KEYWALL reinforcement in the mortar joint.



"EXCLUSIVELY, NOW"

says Al Gans, Masonry Superintendent
R. S. Ursprung Company
Cleveland, Ohio

"I believe in reinforced masonry," says Al Gans. "In fact, I was one of the first in Cleveland to use it. But I was never satisfied with results until Keywall came along."

"It looked right to me. I tried it out. It solved the

problems I had with other types. The results in the wall have lived up fully to my expectations. Today, I use no other type."

Here you see some of the ways Mr. Gans is using KEYWALL to get better, stronger walls.

KEYSTONE STEEL & WIRE COMPANY

PEORIA 7, ILLINOIS



"I build a chase in the wall. Pipes, ducts and conduits are easy to install when KEYWALL is used. I run the KEYWALL right through the chase," Mr. Gans explains. "The center mesh can be cut away as required without destroying the reinforcement value."



"You can't beat KEYWALL as a wall tie," according to Mr. Gans. "It does everything a wall tie should do, and does it better. In addition, it gives reinforcement. What's more, this double-duty product costs no more in the wall than the ordinary non-reinforcing type of wall tie. With KEYWALL I omit header courses, too. KEYWALL doesn't shear when walls move, as header brick do. It's easy to see why I'm so enthusiastic about KEYWALL."





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Acme's new DD Series Flow-Therm Liquid Chillers combine the advantages of close-coupled direct drive between compressor and motor with new engineering features that make these units the most advanced large-tonnage packages on the market today. Completely enclosed, tamper-proofed control panel with pilot lights to warn of open limit switches . . . Pilot-operated regulator valves for smooth, accurate refrigerant control and increased capacity range at low superheats . . . these and many other features are worth your investigation.

TEST CERTIFIED

In addition to the normal factory tests for leaks and mechanical defects, all Acme packaged chillers are tested under full load conditions before leaving the factory. Every unit must perform satisfactorily at its nominal rating. Your guarantee of this tested operation is the new Acme Certificate of Performance, a "first" in the industry.

NINE MODELS - 20 THRU 125 TONS

With Acme you get a more complete range of models, with capacities to fit exact job requirements. This is possible because the Flow-Therm's chief components, famous Dry-Ex Chiller and Shell-and-Tube Condenser, can be tailor-made to match compressor performance exactly — combine operating economy with maximum capacity.



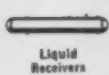
Acme Certificate of Performance issued on all Flow-Therm and Flow-Cold packaged liquid chillers, 3 through 125 tons.



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Manufacturers of Quality Air Conditioning and Refrigeration Equipment since 1919

Follow the trend to pitched roofs
with permanent

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The growing tendency to return to the visible roof line for the purpose of economy and design embellishment in institutional, commercial and industrial buildings has been given impetus by the advent of Robertson's new Color Galbestos.



All the time-tested advantages of long service life, resistance to fire, corrosion, and extreme weather conditions that have made Robertson the world's standard of steel protection are now available in four new attractive colors . . . red, green, buff and gray in addition to the familiar black and maroon. Moreover, sparkling roof and sidewall color combinations are possible at a lower cost than any other type of maintenance-free product known. Write for literature.

With 150 trained sales engineers and 60 qualified service dealers, Robertson is ready to serve you in any part of the country. You'll always have the best technical assistance when Robertson products are specified.



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Architect: Welton Beckett & Associates—Los Angeles, Calif.



specify HILLYARD Floor Treatments for final Clean-Up and Initial Finish

The floors you have so carefully selected for color and design will be a sorry-looking sight by the time the interior trades have completed their work.

Final clean-up and initial finish are crucial. Specify safe cleaning with Hillyard neutral chemical Super Shine-All to be sure that ALL the dirt is gone before the finish is applied.

The local Hillyard "Maintaineer®", a trained floor treatment specialist, will be glad to serve as your own expert consultant, without charge or obligation.



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A 2

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Ask him to survey the floors on your boards, recommend treatments, serve as your "Job Captain".

Ask him also for A.I.A. numbered files containing Architect's information on treatment of all types of floors, and detailed step-by-step treatment instructions for use by your contractor.

*The Hillyard Maintaineer is
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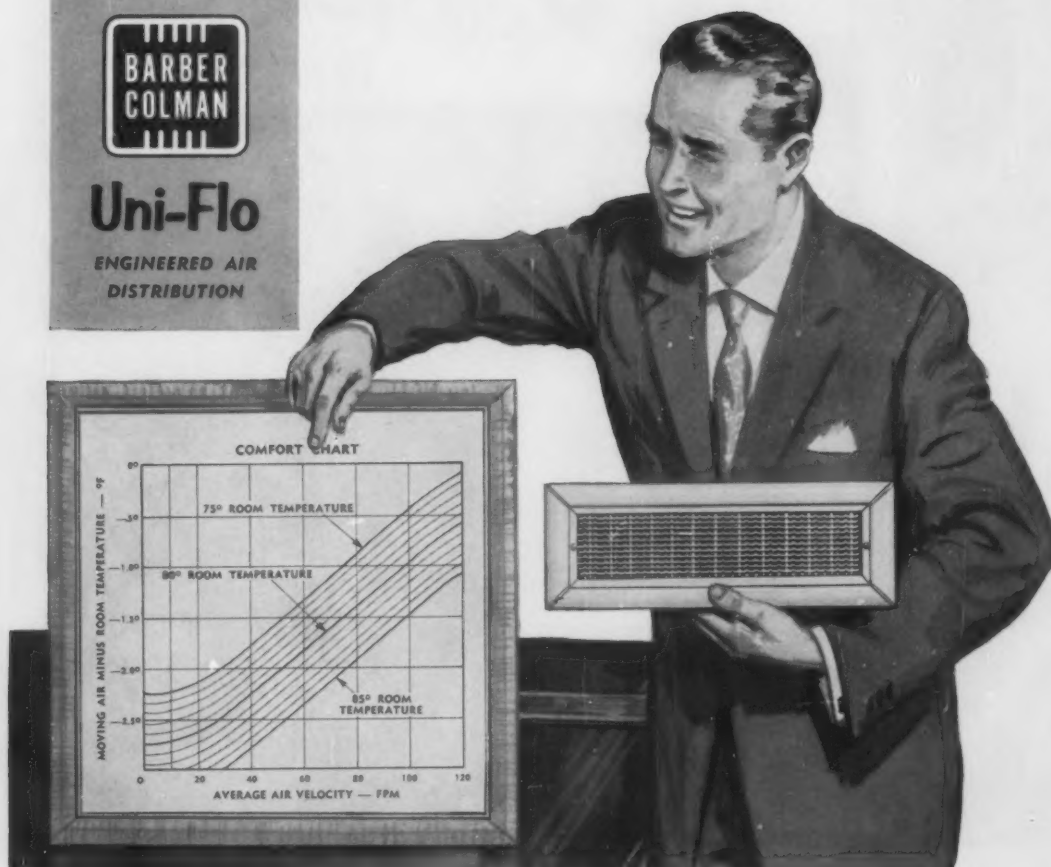
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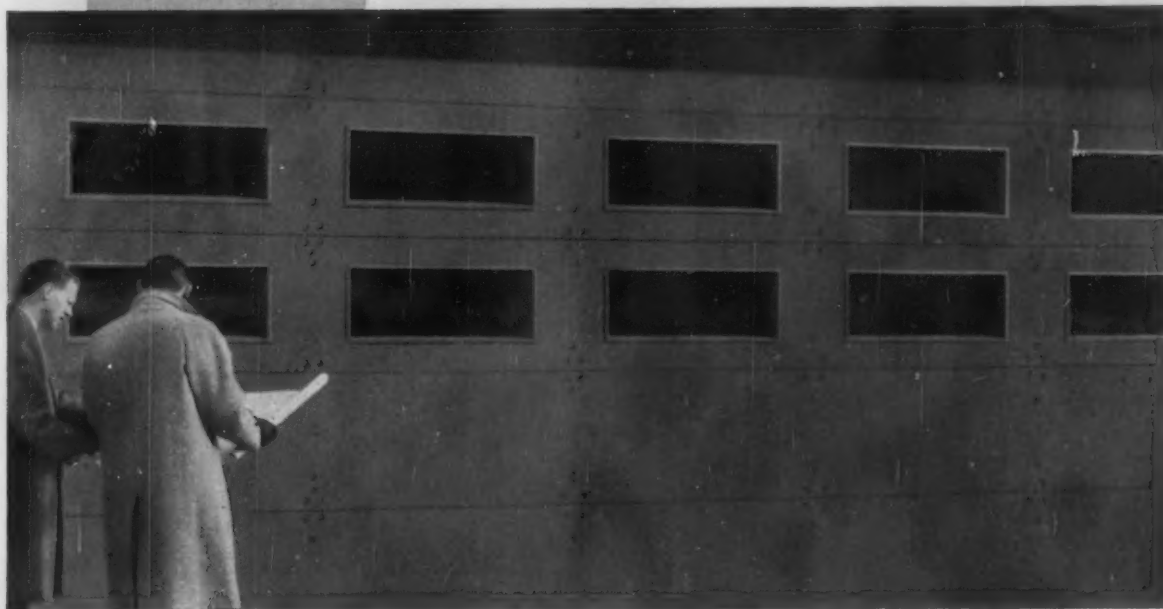
Dept. A, 1104 Rock Street, Rockford, Illinois

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1. Barcol Cam Action closing hardware gives a tighter air seal than conventional wedge-type closing hardware . . . *reduces cost of heating and cooling space inside.*
2. New Barcol WEATHER-KING Flush Door Sections are guaranteed weatherproof and have a U factor of .257 — twice the insulation value of a 12" poured concrete wall — three times the insulation value of ordinary door panels! Combined with Cam Action closing, these new sections *materially add to savings on heating and cooling.*
3. Barcol Electric Operators applied to both exterior and interior doors and gates *eliminate costly starts and stops* in plant traffic and *save many man-hours annually* by freeing workers from nonproductive opening and closing of doors.

Now the Barcol engineers can predetermine the average amount of each of these savings, and the method is ready for use on your present door problems. Variables like local average weather conditions and intended use of each door are realistically applied. In many cases it can be predicted that these features will pay for themselves in two years or less through measurable *extra* plant economies. In other cases the tests show whether or not a feature of the installation is economical. Ask your Barcol distributor (under "Doors" in the phone book) for a savings estimate on your present project or use the coupon on the right.

* **SEND** for this new 8-page booklet demonstrating through specific case material the method by which your Barcol distributor helps you predict how much OVERdoor features can reduce heating costs and save on labor. Also describes and illustrates Barcol Cam Action, WEATHER-KING Flush Doors, and Electric Operators — features that, in many areas, can now be proved to pay for themselves in as little as two years through measurable direct savings.



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**RALPH WOODS HALL
MURRAY STATE COLLEGE
MURRAY, KENTUCKY**

ARCHITECT:

Lee Potter Smith & Associates, Paducah, Ky.

GENERAL CONTRACTOR:

O'Brien & Padgett, Memphis, Tennessee

ROOFING CONTRACTOR:

George A. Hannin Company, Paducah, Ky.



On Murray State College's new dormitory . . .

A RUBEROID BUILT-UP ROOF

Was engineered to fit the job

Ralph Woods Hall, the new dormitory for women at Murray State College, has a unique design feature. Three dormitories are joined into one by connecting three wings with a large circular lobby.

But there is nothing unique in the use of Ruberoid Built-Up Roof specifications. The fact that Ruberoid Built-Up Roofs are the answer to many roofing problems has long been known to progressive architects and builders everywhere.

In engineering the roof construction to fit the needs of the building, three different Ruberoid specifications were used. The largest portion of the roof—398 squares—is Coal Tar Pitch and Tarred Felt with a Gravel Finish (Specification #202). A second section is a

Dubl-Coverage Mineral Surface Roof (Specification #159). In still another area, Asbestos Felt and Asphalt Felt with a Smooth Finish (Ruberoid Specification #208) was used.

As with all Ruberoid Built-Up Roofs, rigid standards of manufacture will assure Murray State College of many more years of trouble-free service for their roofing dollar.

Ask your Ruberoid Approved Roofer to demonstrate the advantages of Ruberoid products when next you are faced with a built-up roofing job. You will find that there is a Ruberoid specification to fit whatever requirements you may have.



The RUBEROID Co.

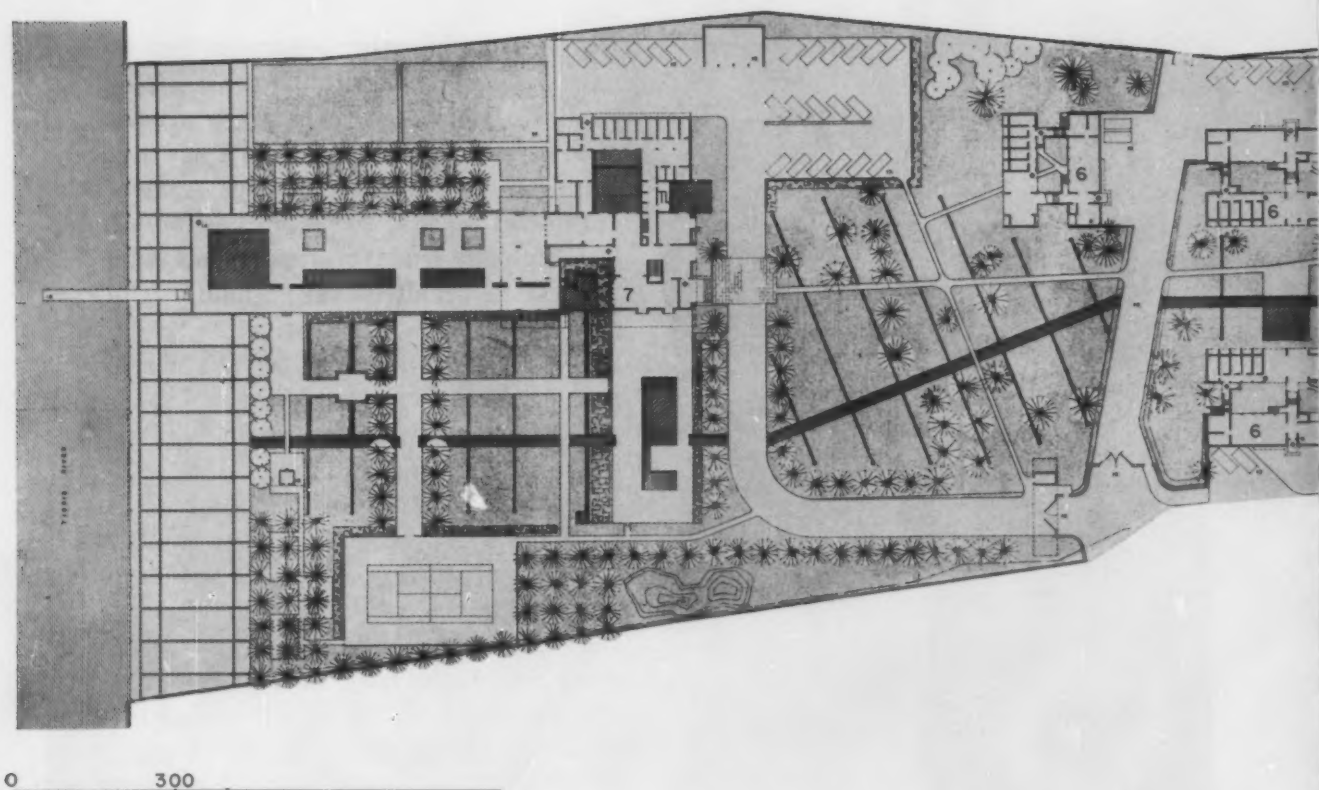
Asphalt and Asbestos Building Materials

500 Fifth Avenue, New York 36, N. Y.

Now that architecture is turning into a broad new highway—a road to richness—Dean Sert seems to stand out even more prominently than before. Not because he is a new figure in the procession—he has always traveled this road—but because there are new eyes to see. The highway leads, of course, toward a new fullness in architectural vocabulary, toward new explorations in shapes, in materials, scale and proportion. Sert has always exerted his pull in these directions; though a leader in modern thought he was never beguiled into the narrower streets of the dogmatic quarter. Now, happy to applaud the refinements in steel and glass, he points out that flat styles quickly suffer in repetition. Especially is this true within the urban pattern. We need now the variety of other materials and forms, other roof lines, something to compare with the sculptural qualities of the vaults and domes of earlier days. He would urge more concern with urban land uses for beauty and enjoyment, so that architecture may enrich life in a materialistic age. If visual satisfactions are important to good living everywhere, how much more vital in big cities, where the whole scene is man made.

JOSÉ LUIS SERT

These themes of Sert's are here illustrated in three projects, buildings differing widely in scale and program, also in locale. As it happens they are designed for temperate or tropical climates, and all make use of sun and glare protective devices. They are all concrete structures, with particular attention to the design of the roofs and roof lines—folded slabs, shell concrete vaults, and hyperbolic paraboloids used as parasols (Sert designed such a parasol for a small weekend beach house in Barcelona in 1933). Sun and shadow do much to enrich the architectural effects. And all of these show Sert's attention to skillful site development, in patios, terrace and garden elements and useful courts.



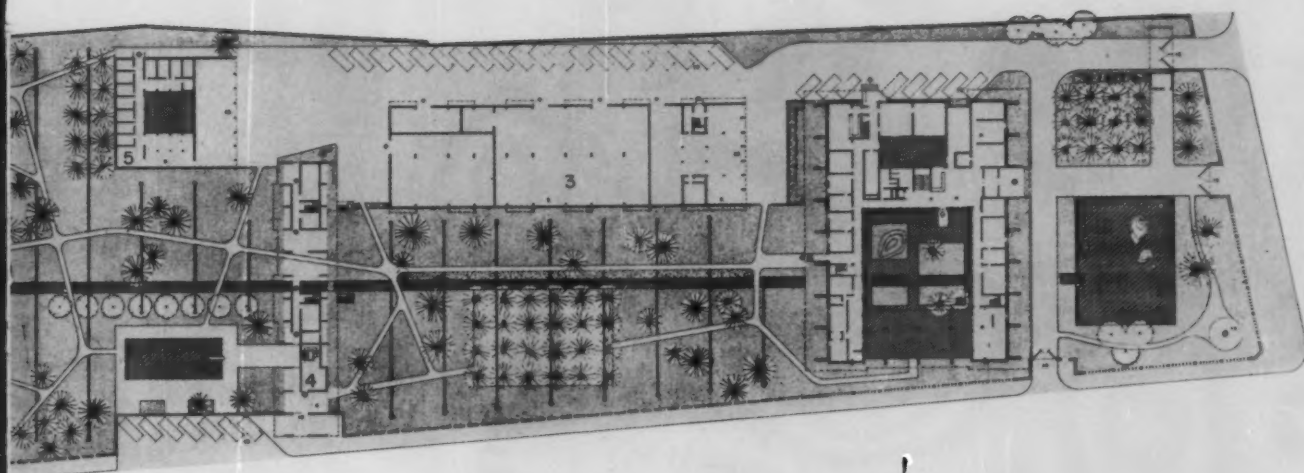
American Embassy at Baghdad

Environmental factors, and the obligation to express them, probably nowhere else become so dominant as in the State Department's program of building embassies in foreign lands. In each instance the architect visits the site to study local materials, resources, craftsmanship, to get acquainted with the culture, climate and people. And perhaps nowhere are these matters so insistent as in Baghdad, where in addition to all of the influences which could be anticipated, there is the further confusion of great local interest in American building ideas and slicker architectural expressions, to the point of a great deal of inept copying.

The site for the embassy complex brings many of the influences to focus. Situated in the middle of the new residential district of Baghdad, the long

narrow site stretches between one of the major thoroughfares and the river Tigris. The terrain is flat. Both bordering properties are richly planted estates and the site itself contains a number of palm trees. It is divided down the center by a six-foot-high dike which is part of the flood control.

Sert has divided the site into a series of court-like spaces, separated and partially enclosed by the buildings, which also define the functional role of each open space. Thus the siting of the Embassy office building at the western end of the site (related to the main public approach road but separated from it by the large rectangular reflecting pool) creates the formal entrance space for official purposes. Behind the office building the long thin court, whose length is further emphasized by the



1. Embassy Office Building
2. Marine Guard Quarters

3. Ancillary Utility Building
4. Staff Housing
5. Servant's Quarters

6. Senior Officer's Residence
7. Ambassador's Residence

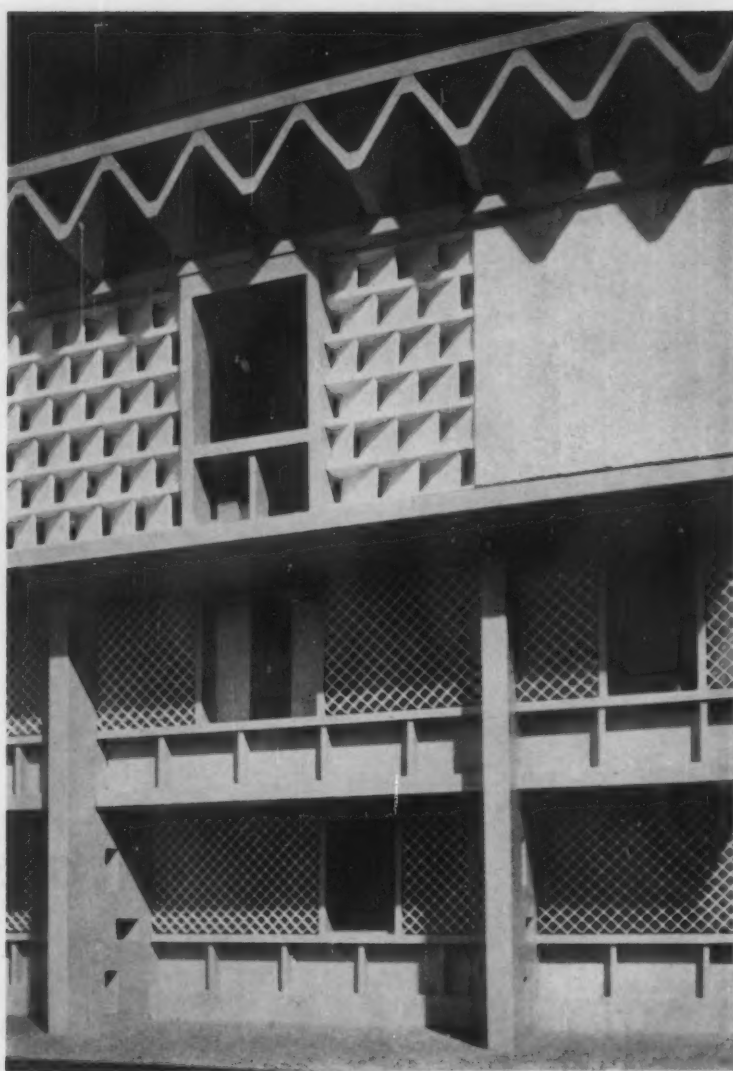
Architect: José Luis Sert; Landscape Architects: Hideo Sasaki & Associates; Structural Engineer: Paul Weidlinger; Mechanical Engineers: General Engineering Associates



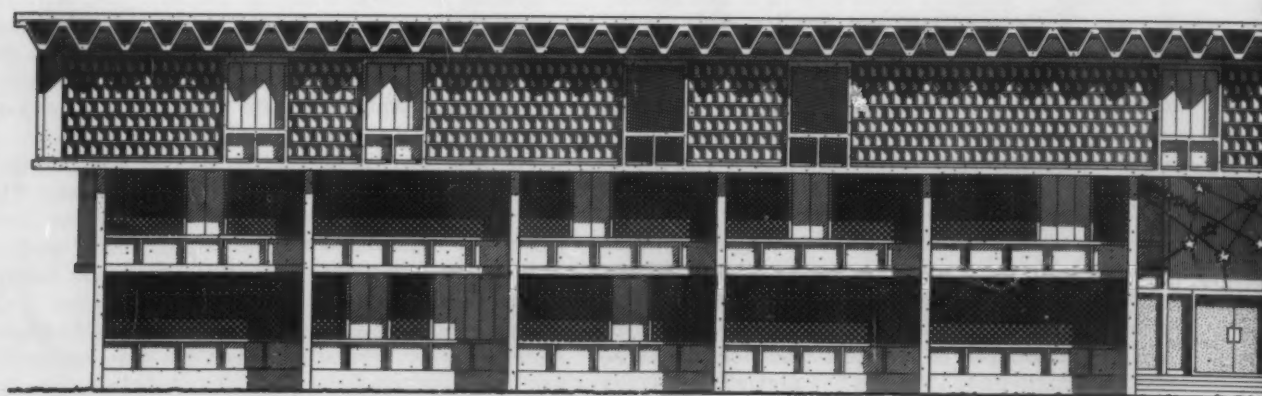
broad, rhythmic treatment of the low flanking utility building, is designed to form a vista and spatial contrast to the enclosed and smaller scale treatment of the interior court. The space is restricted to pedestrian traffic, and is terminated by the staff housing building, the tallest structure of the complex. This apartment building, with the three villas and servants' building to be built later are grouped to form another court space containing the social and recreational activities of the staff members and their families. The high dike separates this space from the grounds surrounding the ambassador's residence. Two large formal terraces extend from the house itself into the garden which is formally landscaped in the local tradition. One terrace terminates on the bank of the Tigris River.

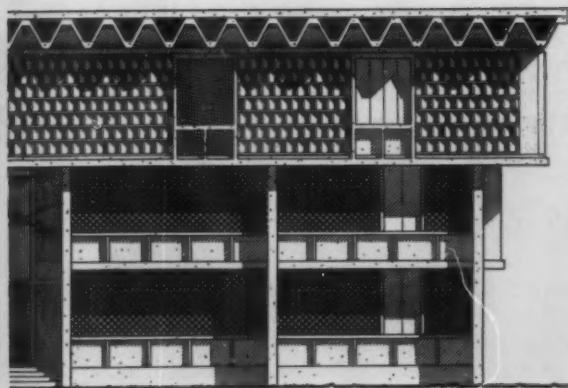
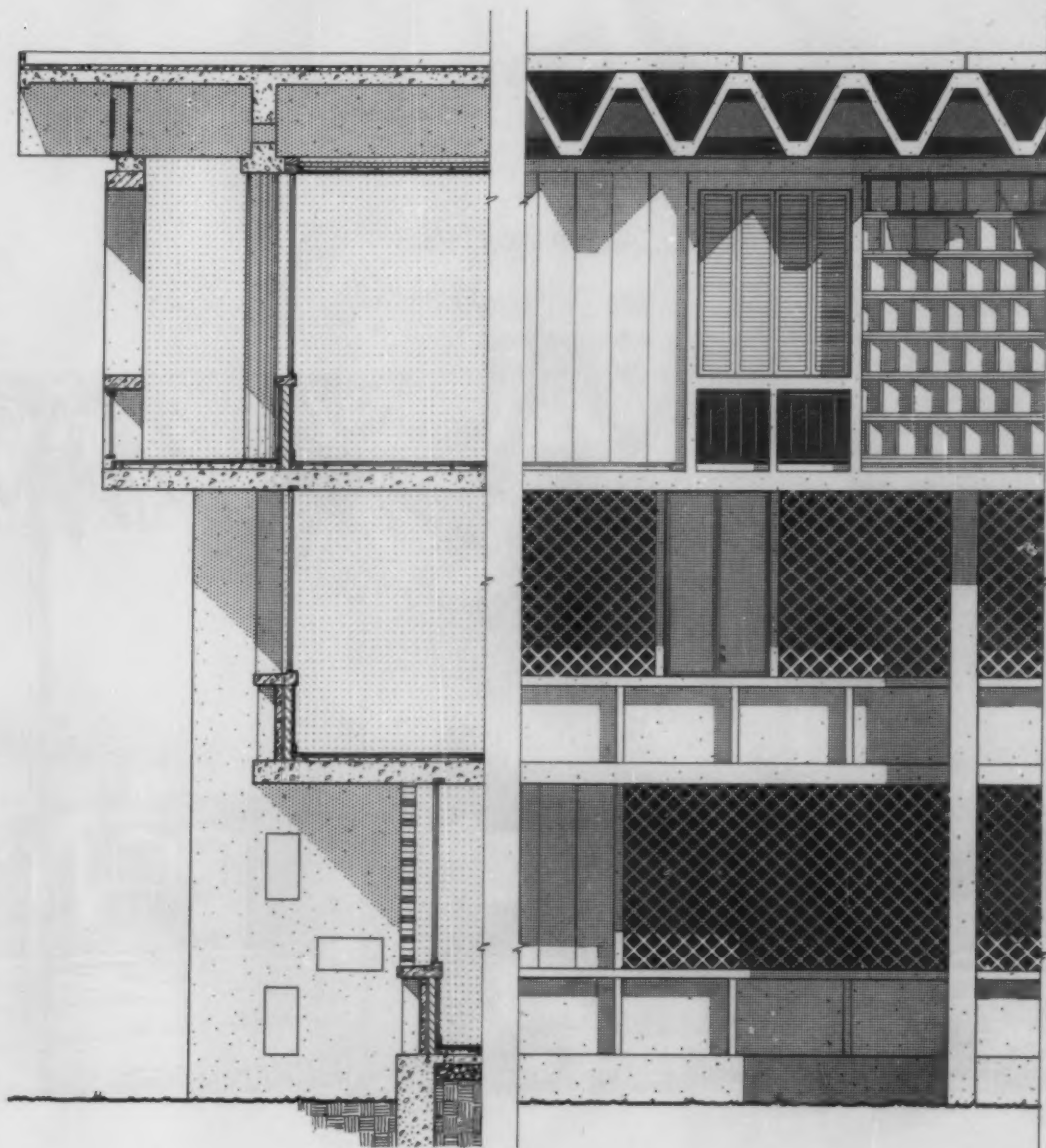
Throughout the consecutive courts runs the main irrigation channel. Water is the unifying feature, essential for the irrigation of the grounds, but also supplying the pools and terrace ponds which, in the tradition of Middle East countries, enrich the architectural setting by their contrast to the surrounding arid desert landscape.

The annual rainfall of the area is about twelve inches, nearly all of which falls in the winter. The four summer months are completely rainless. Irrigation is essential and the system employed is standard for the area—a central canal with lateral ditches covering the whole site. The water is pumped from a well on the river bank. The constant summer irrigation improves the extremely low humidity and assists in controlling dust.



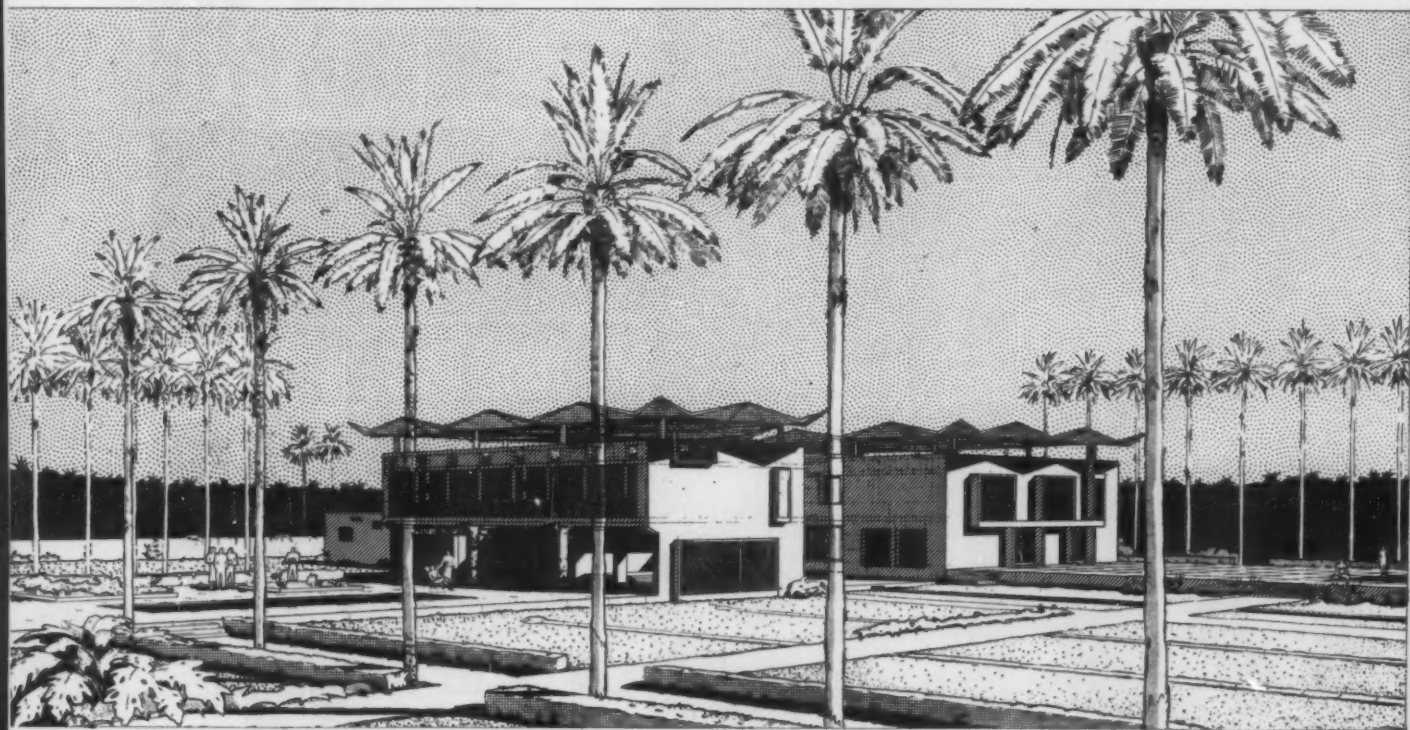
Embassy office building, Baghdad





The annual temperature variation is from just above freezing on occasions in winter up to 120 degrees in summer. Insulation is given by double roofs on all main buildings, for example in the ambassador's residence, a parasol of concrete hyperbolic paraboloids is supported on columns allowing free air flow between them and the surface below. Year around comfort is provided in all buildings by an air system using warm water in winter and chilled water in summer. The system is supplied from a central plant in the utility building.

The Embassy office building is planned on three floors enclosing a landscaped courtyard. The section of the facade shows the system of sun-shading provided by the stepping back of the lower floors and the supporting of the upper level overhangs by



Ambassador's residence, Baghdad

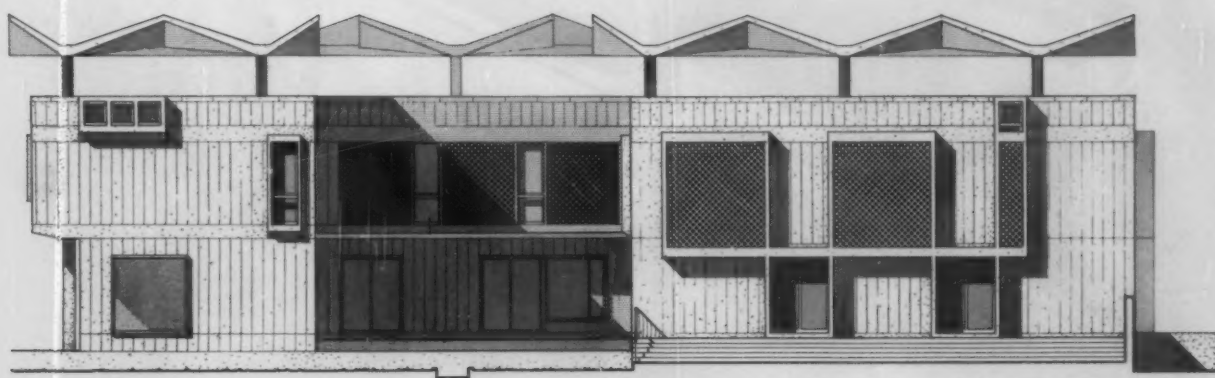
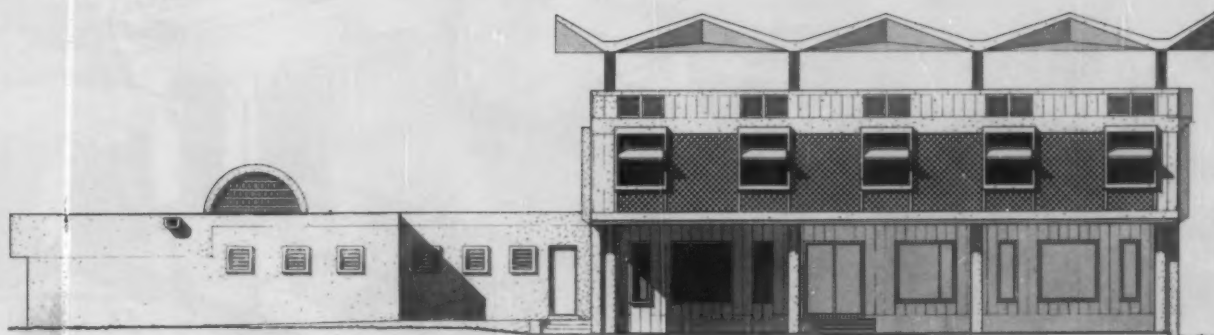
concrete slab piers which also serve as vertical sun breaks. The double roof is made of reinforced concrete folded slab troughs capped with precast reinforced concrete planks laid with open joints. The troughs, which are three feet deep, are self flashing, and the water running through the open joints drains to the outside and there falls on gravel at the ground level. The roofing is completed with a flat hung plaster ceiling.

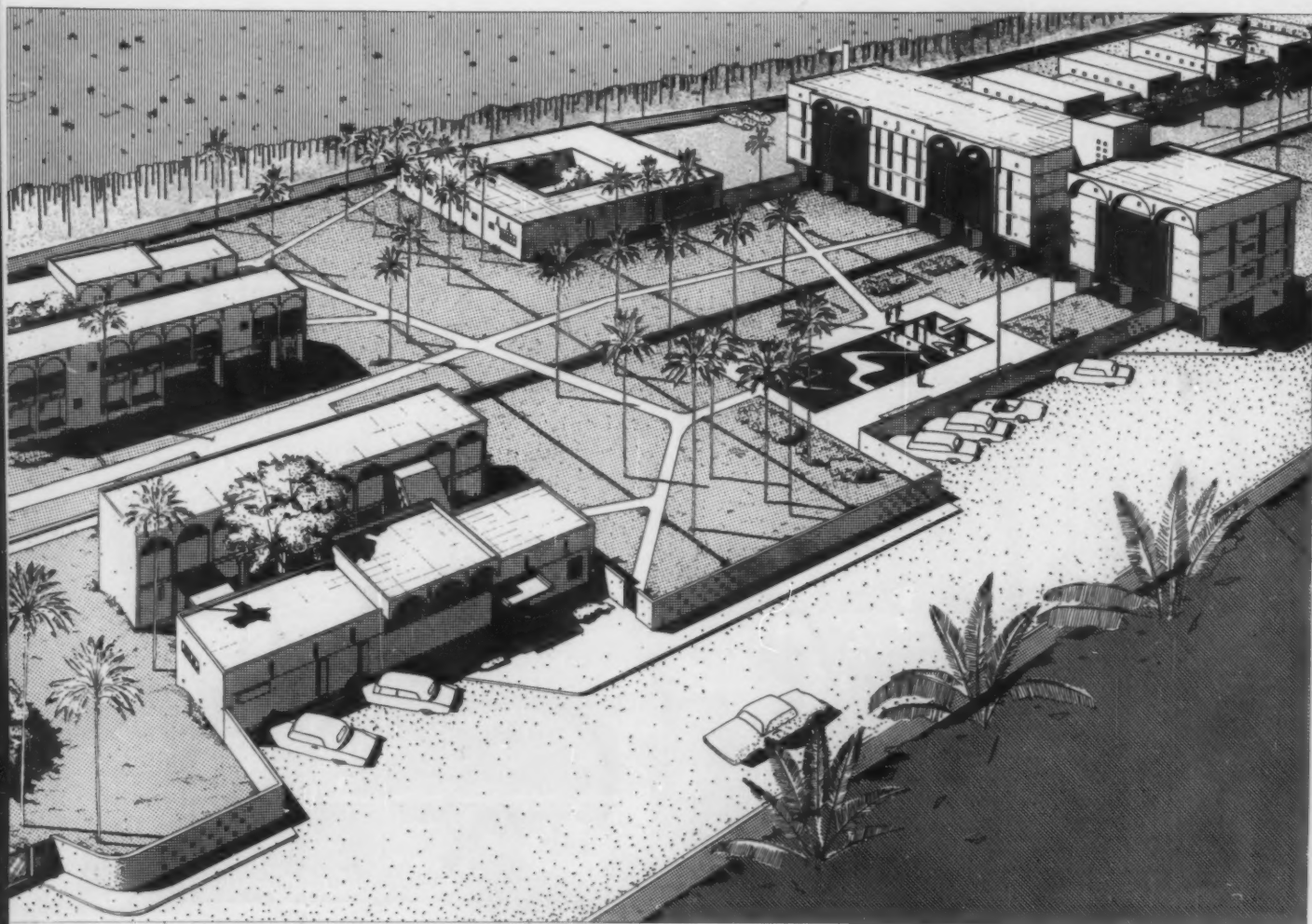
The construction is reinforced concrete columns and flat slabs. Externally all exposed concrete is bush hammered and left in natural color. The wall surfaces to the interior court are faced with terrazzo slabs pierced with small glazed square windows. These windows are glazed with colored glass in bright primary colors. On the east and west ele-

vations the first two floors are exposed concrete spandrels and white ceramic tile screens above. The upper story is white ceramic glazed louvred screen over openings and precast white terrazzo slabs where solid. Shutters are in teak painted in primary colors. Window and shutter openings are framed by pre-cast concrete frames.

The ground floor of the staff apartment building is open except for entrance halls and storage areas. In the southern block are three-bedroom apartments, one per floor. In the main block two-bedroom apartments fill the second and third floors, but on the top floor with balcony access from the main staircase are one-bedroom apartments. The top floor apartments have vaulted ceilings.

The construction of the building is concrete ma-





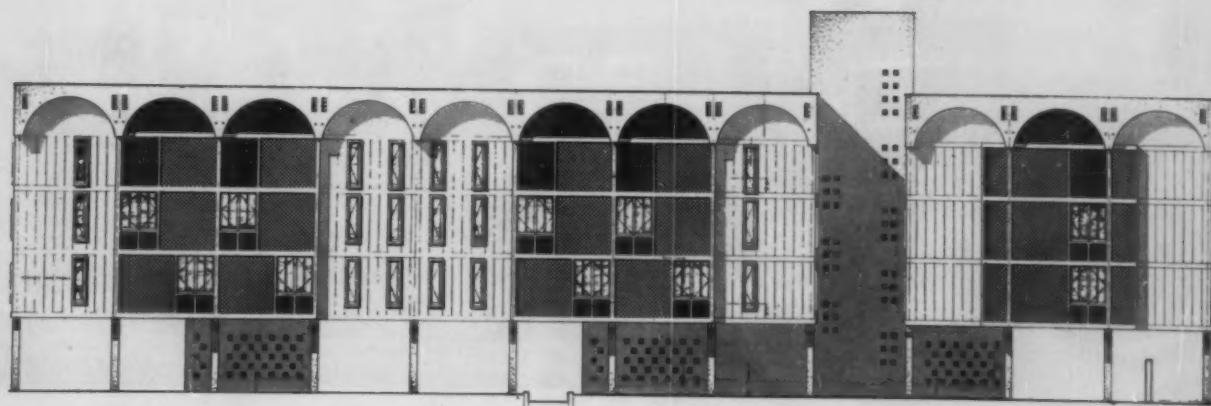
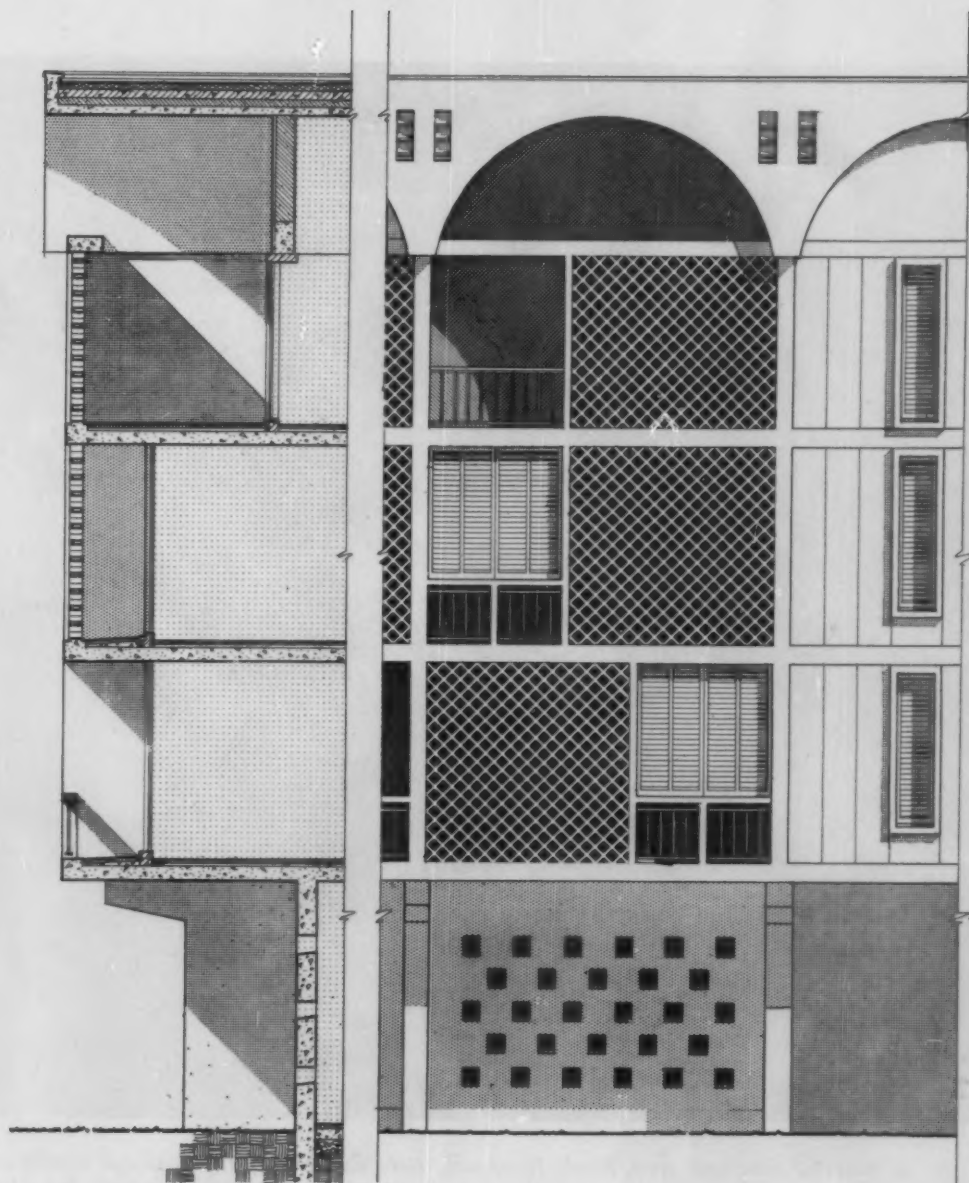
Staff apartments, Baghdad

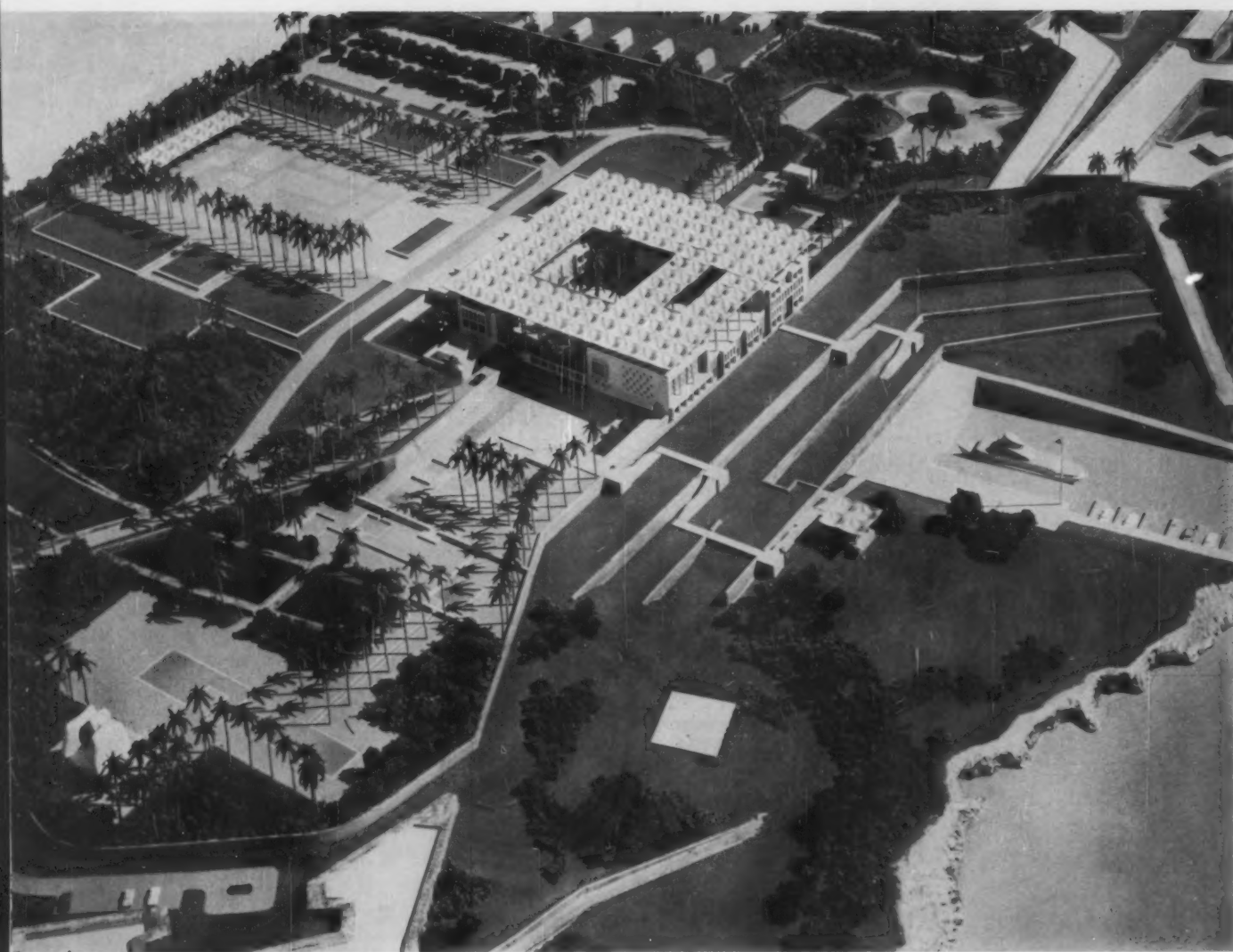
sonry cross wall and reinforced concrete floors. The cross walls also support the roof vaults which in turn are bridged by precast reinforced concrete planks, forming a double roof. The vaults are topped with an insulation fill of native gypsum. The waterproof roof is installed on top of the precast slabs. Exterior finishes are whitewashed concrete. The glazed ceramic screens on the eastern face are leather color or turquoise blue. Shutters are painted in bright colors.

The planning of the ambassador's residence has been arranged to give an easy architectural transition from the intimate domestic scale for everyday living to the expansive scale required for official diplomatic functions. These functions will range from indoor receptions for from 50—100 persons, to

open air receptions for up to 1000 guests. Consequently both the areas of the living and dining rooms can be extended by drawing back sliding doors which stack behind spur walls. The enlarged reception rooms in turn lead out to the garden terraces.

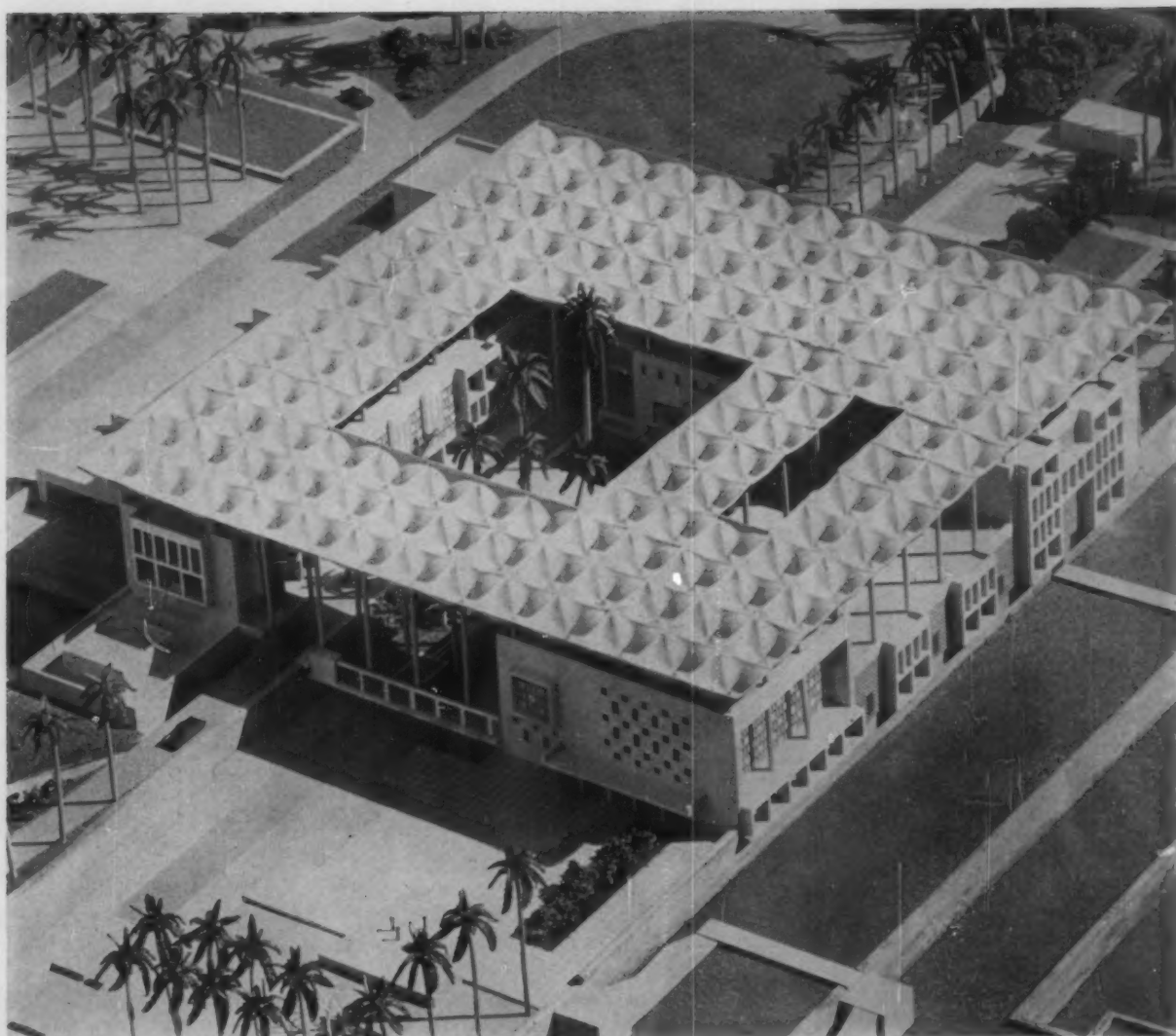
Throughout the project both construction and finishes have been detailed to use a minimum of imported materials. Concrete has been used extensively, floor surfaces are terrazzo or concrete tiles. External facings are precast white terrazzo slabs. Window sashes are steel—most woods being subject to attack by white ants which inhabit the palm trees. External openings are protected by glazed tile screens; balcony openings have teak shutters.





Architects: Jose Luis Sert, Mario Romanach, Gabriela Menendez; Landscape Architects: Hideo Sasaki & Associates; Consultant for Site Planning: Paul Lester Wiener; Structural Consultant: Felix Candela





Presidential Palace of Cuba, Havana

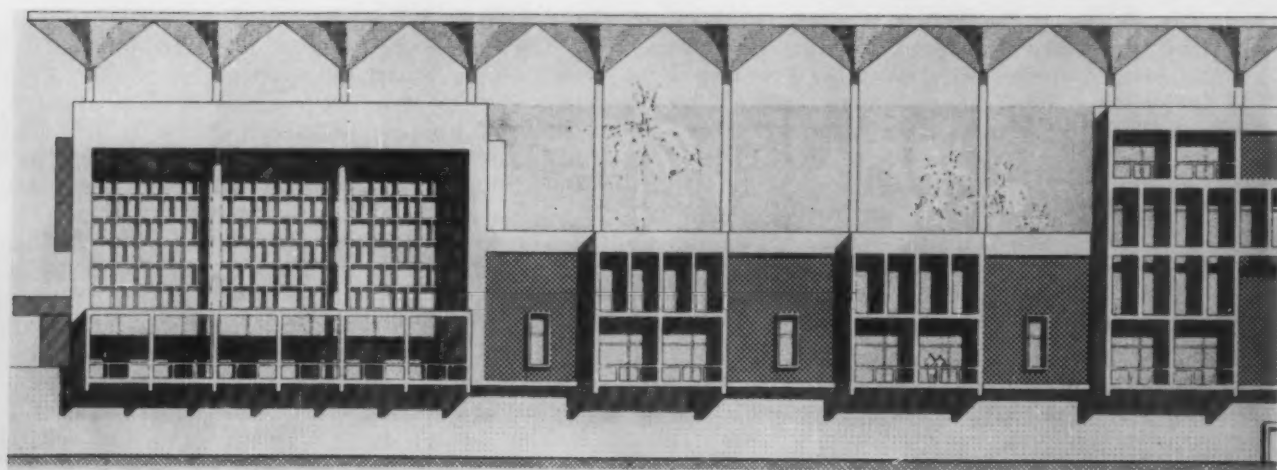
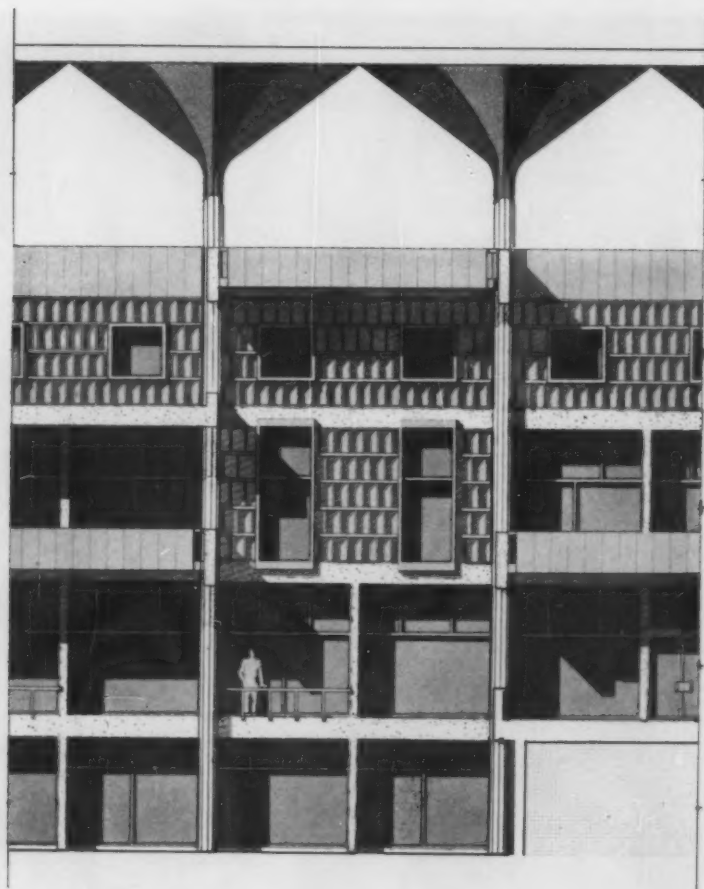
The Palace of the Palms is a series of related buildings under one large shell concrete parasol. Included are: the Ministry of the Presidency, the Presidential Residence ball rooms and dining facilities for entertainment, cafeteria and other services for office employees, and quarters for the presidential guard. The building is fully air conditioned. These different sections each have individual needs and characters so the dominant problem was to form an architectural unity from the agglomerate parts and yet retain in each part the character and expression appropriate to its function. The repeated module of the structure (sometimes emphasized, sometimes masked out by a plain wall) gives a rhythm to the whole, but the most positive unifying element and that which gives the Palace of the Palms its architectural character

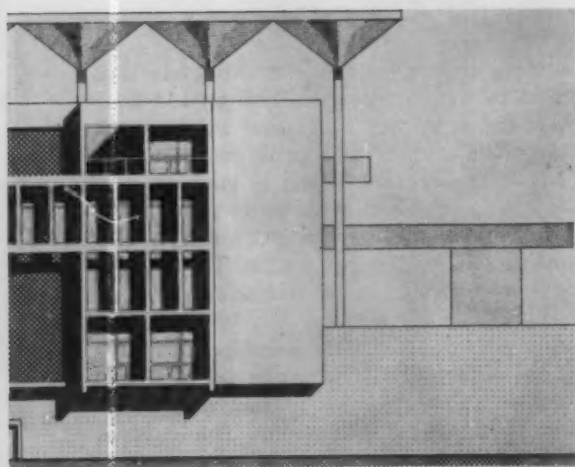
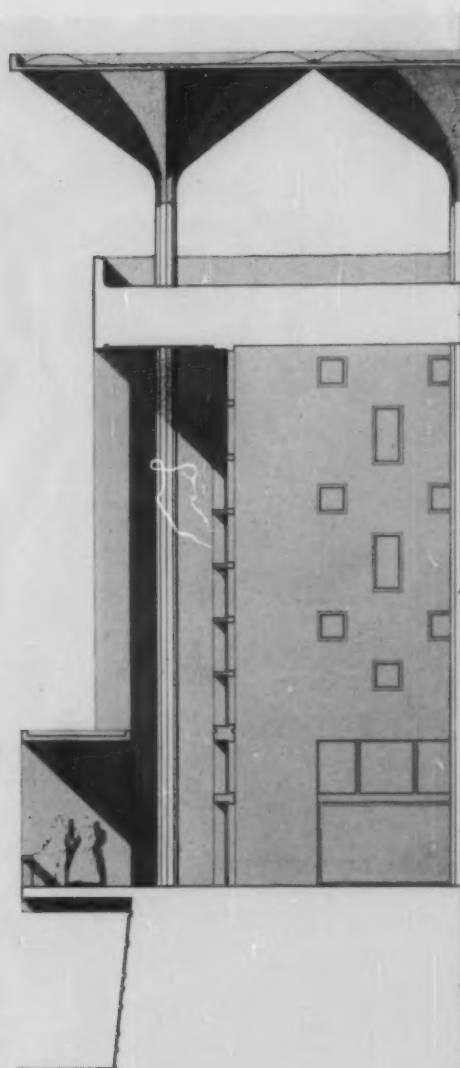
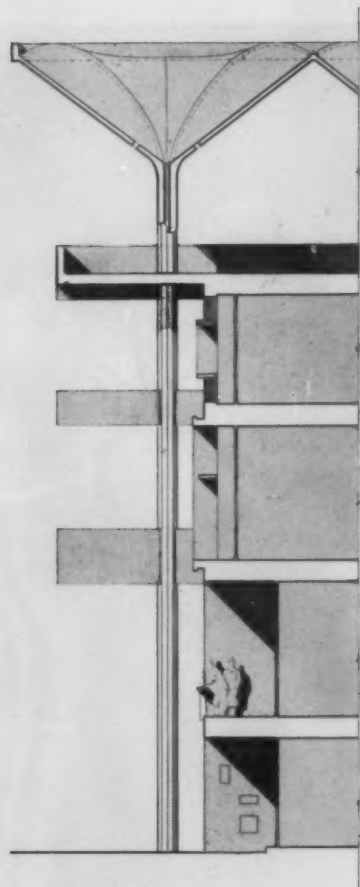
and monumental scale is the concrete shell roof.

The roof is composed of 140 concrete shell elements in a square, 13 elements on a side. Each parasol element is composed of hyperbolic paraboloid shells springing from a central column that has an octagonal section. The shape resulting from the composition of curving shells and the column recalls the royal palm, a symbol of Cuba.

The facades are composed of varied fenestration elements and glazed tile grills. The glazes are of different bright colors. Some of the windows make use of bright-colored glass. The masonry walls are faced with gray and white marble. Many of these elements are to be found in the traditional architecture of Cuba.

The site of the new palace is on undeveloped land directly across the harbor entrance from Old





Havana. The channel connecting the harbor to the sea until recently isolated this area and retarded its development. The site selected for the Palace is located between two historic fortresses. The 16th century Castillo del Morro (Morro Castle) is located at the very entrance to the harbor, and the Fortaleza de La Cabana (Fortress of La Cabana) of 18th century origin is built across from the city on strategic heights. The Morro is a famous tourist site and traditional landmark, and the Cabana is now the Cuban Military Academy. The defenses of the two fortresses were linked by an old stone wall running between them. The new palace was placed so that this wall would become a part of the new building. Located on the heights of the site, the Palace will be a part of the vista from Old Havana and the waterfront drive.



Studio for Joan Miró, Mallorca

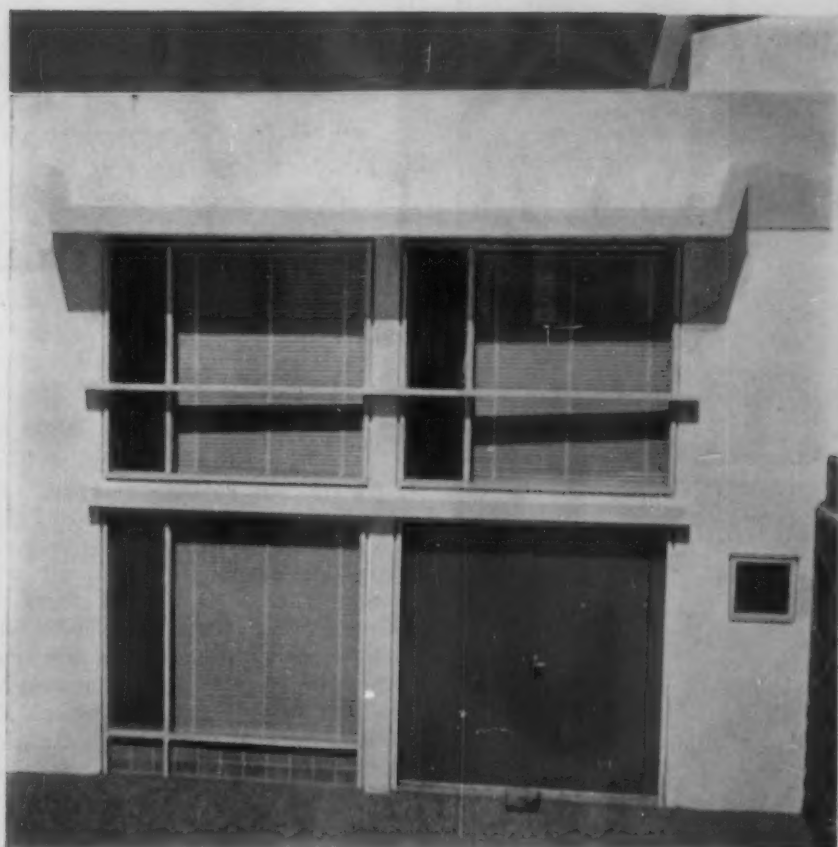
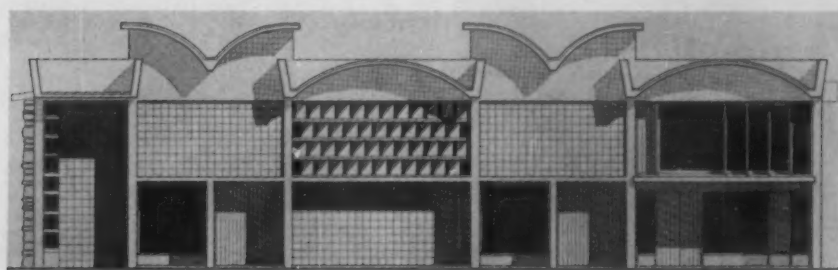
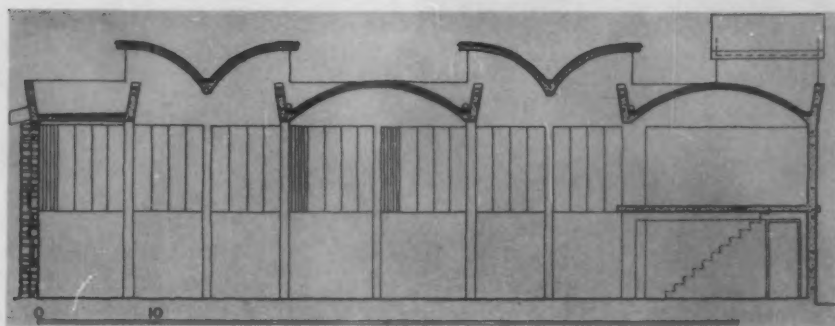
Architect: Jose Luis Sert; Structural Engineer: Antonio Ochoa; Supervising Architect: Enric Juncosa

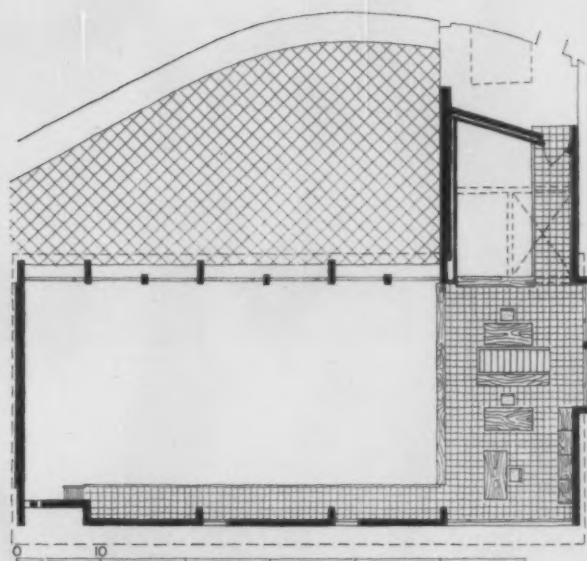
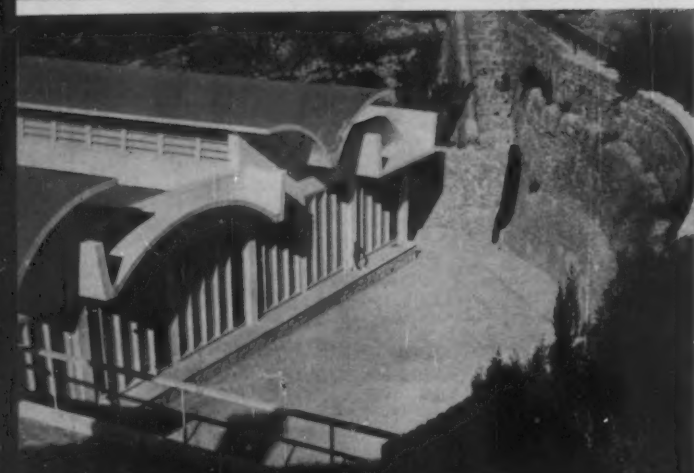
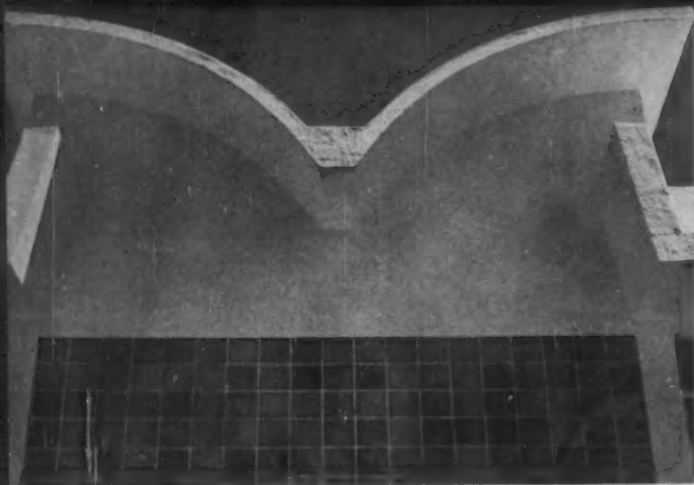
The painter Joan Miro has moved his residence to the island of Palma de Mallorca, where he bought an old farm house and land on the terraced slope of the island. These terraces are maintained by high walls built of dry stone masonry and are characteristic of the island. Carob trees, pine trees, and almond trees, typical to Mallorca, surround the house. The terraces are connected by flights of stone stairs, in the same masonry of the walls. Both walls and stairs evidence the good local craftsmanship.

The studio building was placed on two of the terraces. A long curving wall of the next higher terrace encloses a patio to the north of the studio for the display of sculpture. This patio is paved with pebble mosaic and stone slabs.

The studio is divided into two main levels that conform to the existing terraces. The ground floor at one level, the sculpture court and mezzanine at another. Entrance to the building is possible from three levels as the roof entrance is connected to the terrace rising above the sculpture court. The ground floor consists of entrance, storage, and main (painting and sculpture) studio. The storage has a height of two stories to accommodate large pieces.

The building is roofed with a series of varied membrane concrete vaults. The vaults are arranged to form monitors for cross ventilation and a certain amount of lighting in the ceiling. The louvered vents are oriented in respect to the breezes.





All concrete retains the finish left by the forms and is whitewashed. The front of the studio toward the sea (southwest exposure) uses a number of sun protection devices for the large windows. One is composed of 16 by 16 inch glazed terra cotta tiles forming rows of vertical louvers on horizontal tile courses, giving protection against high and low sun rays. The large windows are deeply recessed, and the roof has a strong projection. Roof projection, window recesses and tiles make an animated pattern of shadows. The stone retaining walls provide a powerful base for the building.

Materials are concrete, native stone and terra cotta tile (also used for floors). Windows are fixed glass, as brightly colored hinged wooden panels give openings for ventilation.

On the west coast of Florida off the Gulf of Mexico, near the highway southward through the Everglades lies Warm Mineral Springs, a two acre blue-grey lake. Sufferers from arthritis, rheumatism and other afflictions bathe there in the nine million gallons of 87 degree mineral water which flow daily from a subterranean spring. The owners hope to develop the area into one of the great health spas of the world. They claim that this is the original Fountain of Youth sought by Ponce de Leon.

The owners intend that the projected buildings of the health spa be subordinate to the landscape. The pavilion shown in the following sketches has been designed to house certain administrative functions, to provide an area for light refreshment and to invite visitors to the site. Of the symbolic quality of the design Victor Lundy says "... the arches are intended to suggest an upward growing form, reaching toward youth and rejuvenation, to symbolize the thought of a fountain of youth by a plastic, flowing shape."

The owners hoped for a Spanish courtyard theme because of the history of the spring with its roots in Spanish discovery, and because they believe that this is a fundamental design that would be liked by a great many people of every age and nationality. The building is therefore a simple rectangle with two arcades, one on the interior, the other on the exterior. The interior arcade surrounds the courtyard which, since it must be evocative of Spain, will have a fountain, benches, richly textured paving,

Pavilion Symbolizes Fountain of Youth

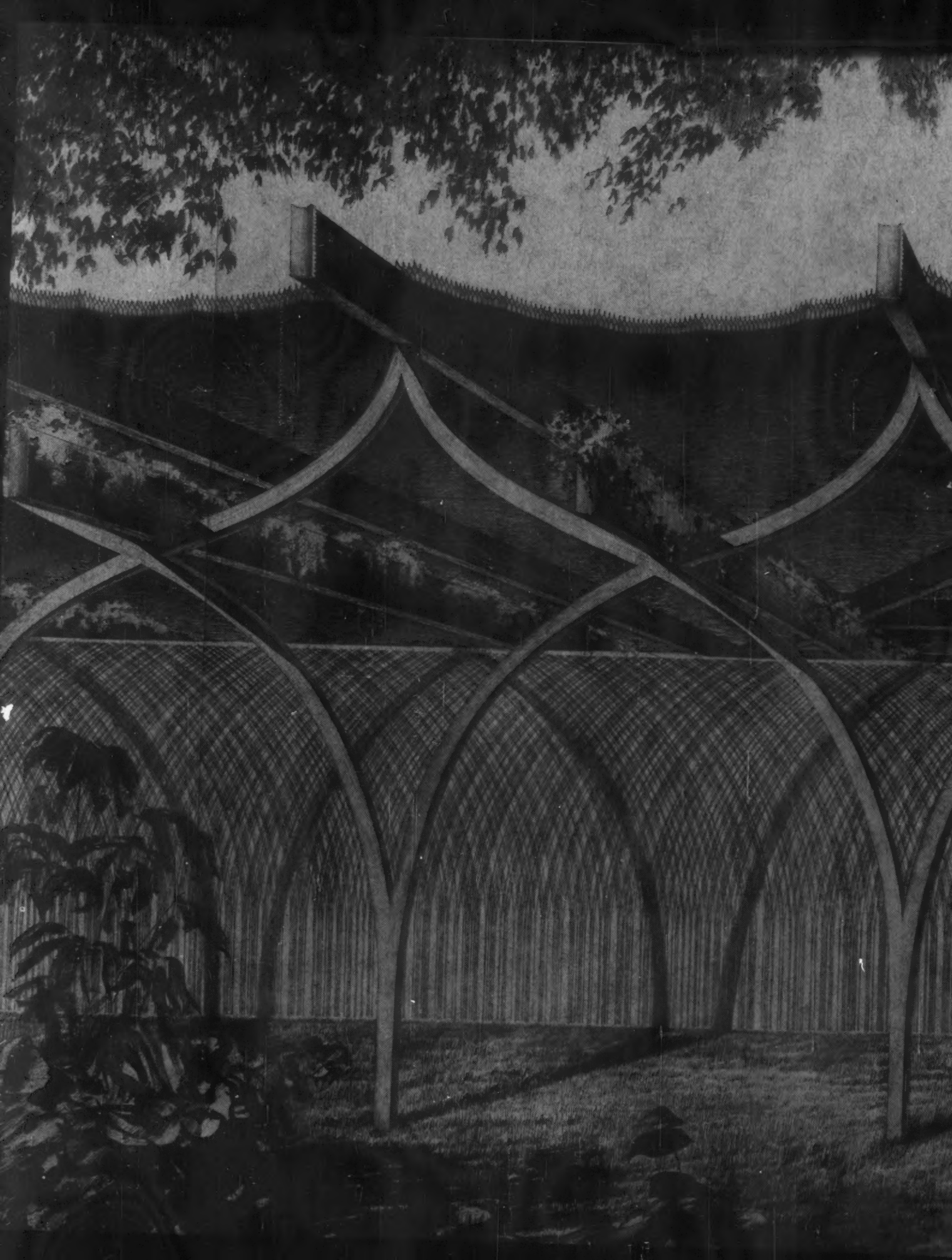
ARCHITECT: *Victor Lundy*

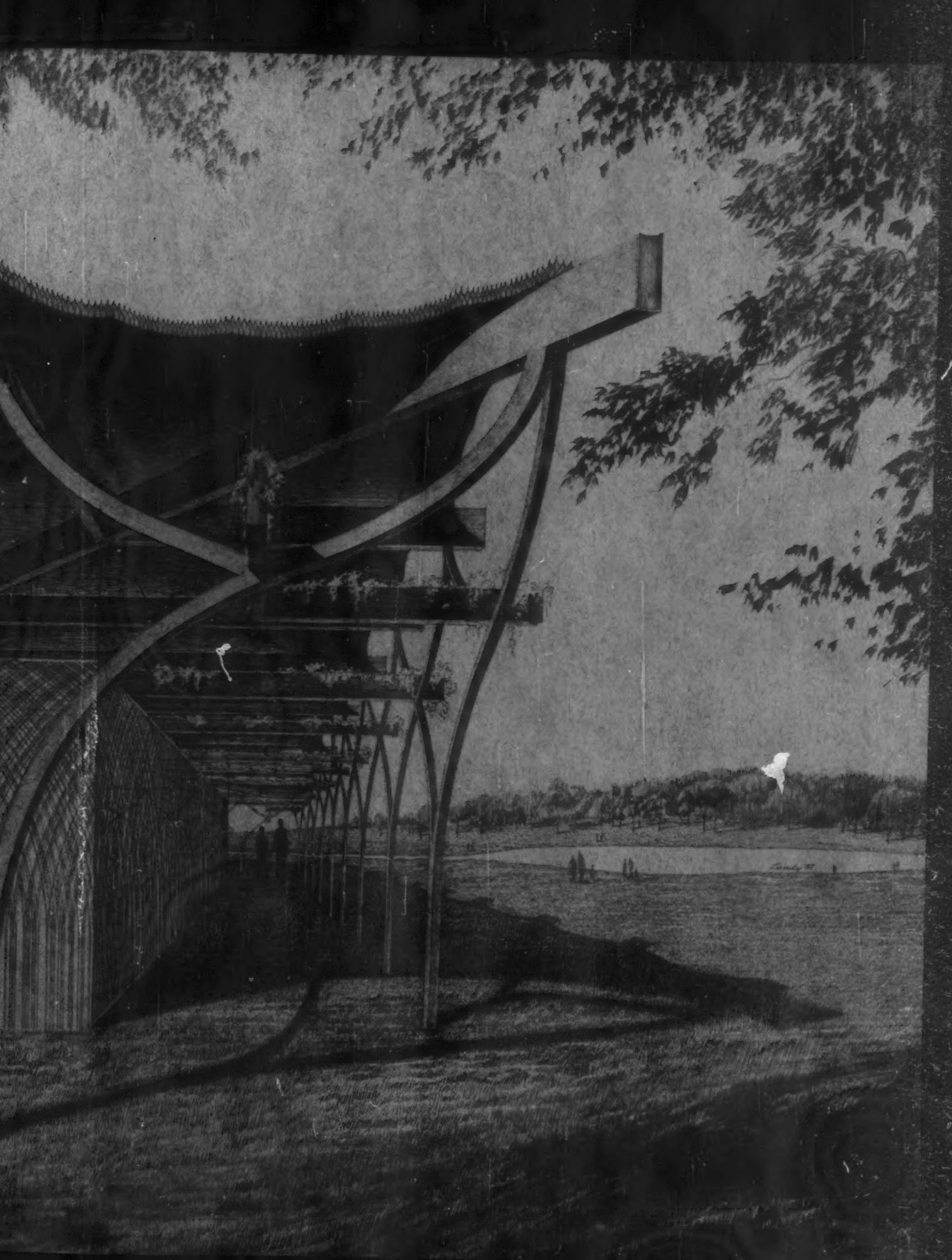
OWNER: *Warm Mineral Springs, Inc.*

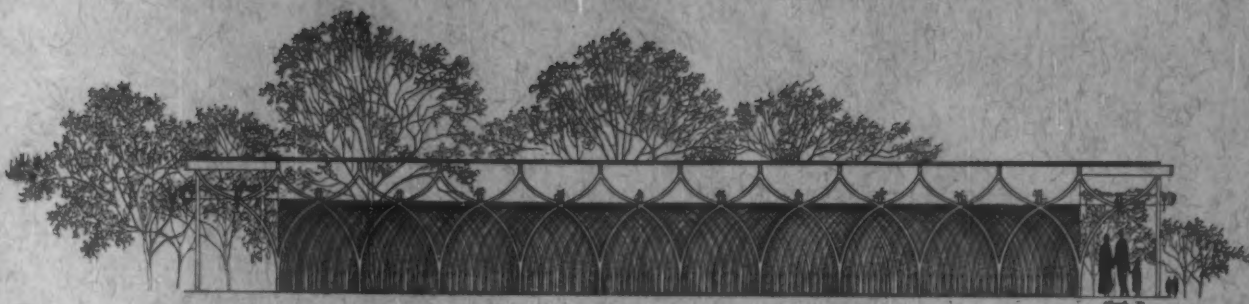
LOCATION: *South of Venice, Florida*

All drawings by the architect





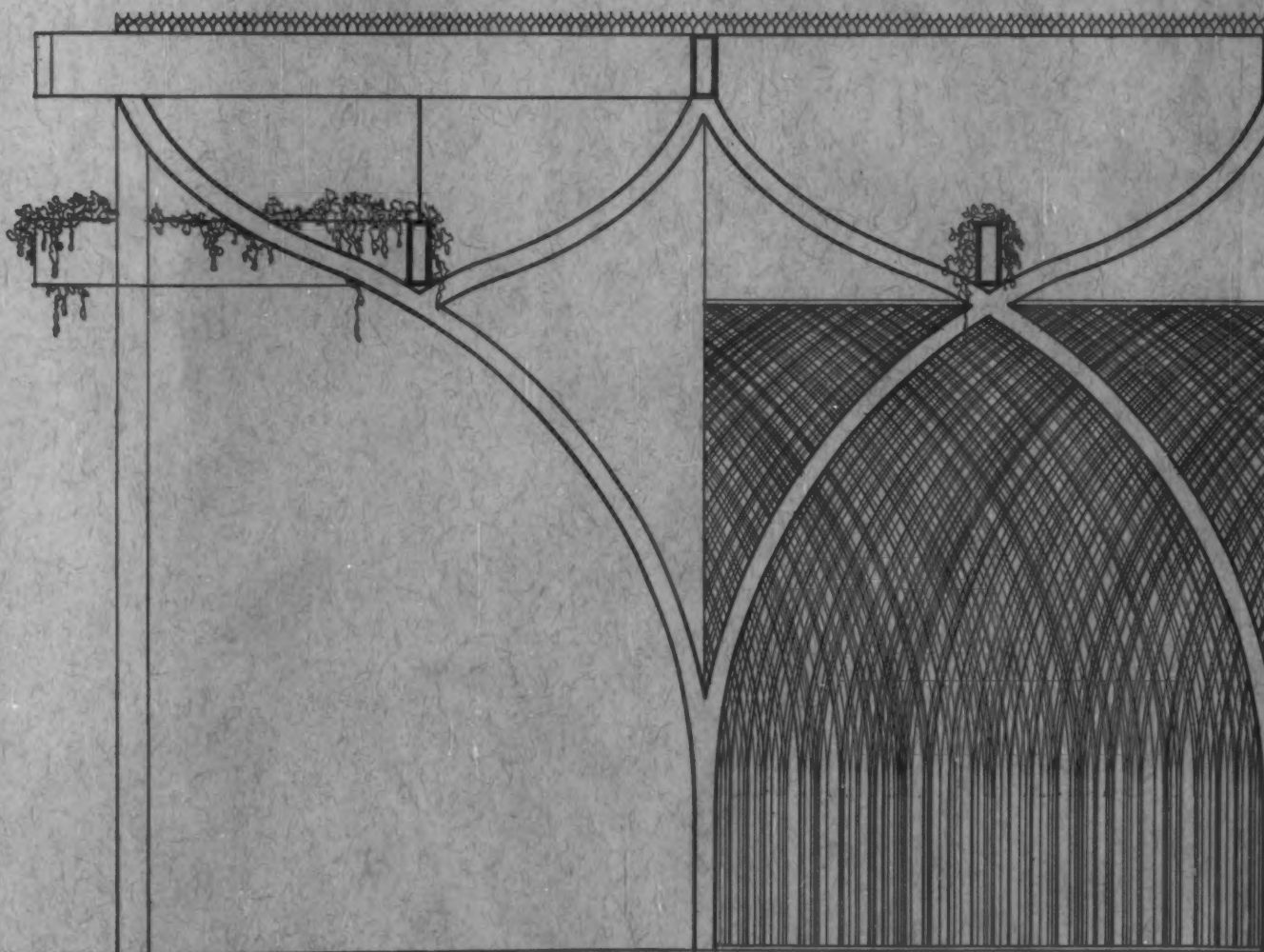




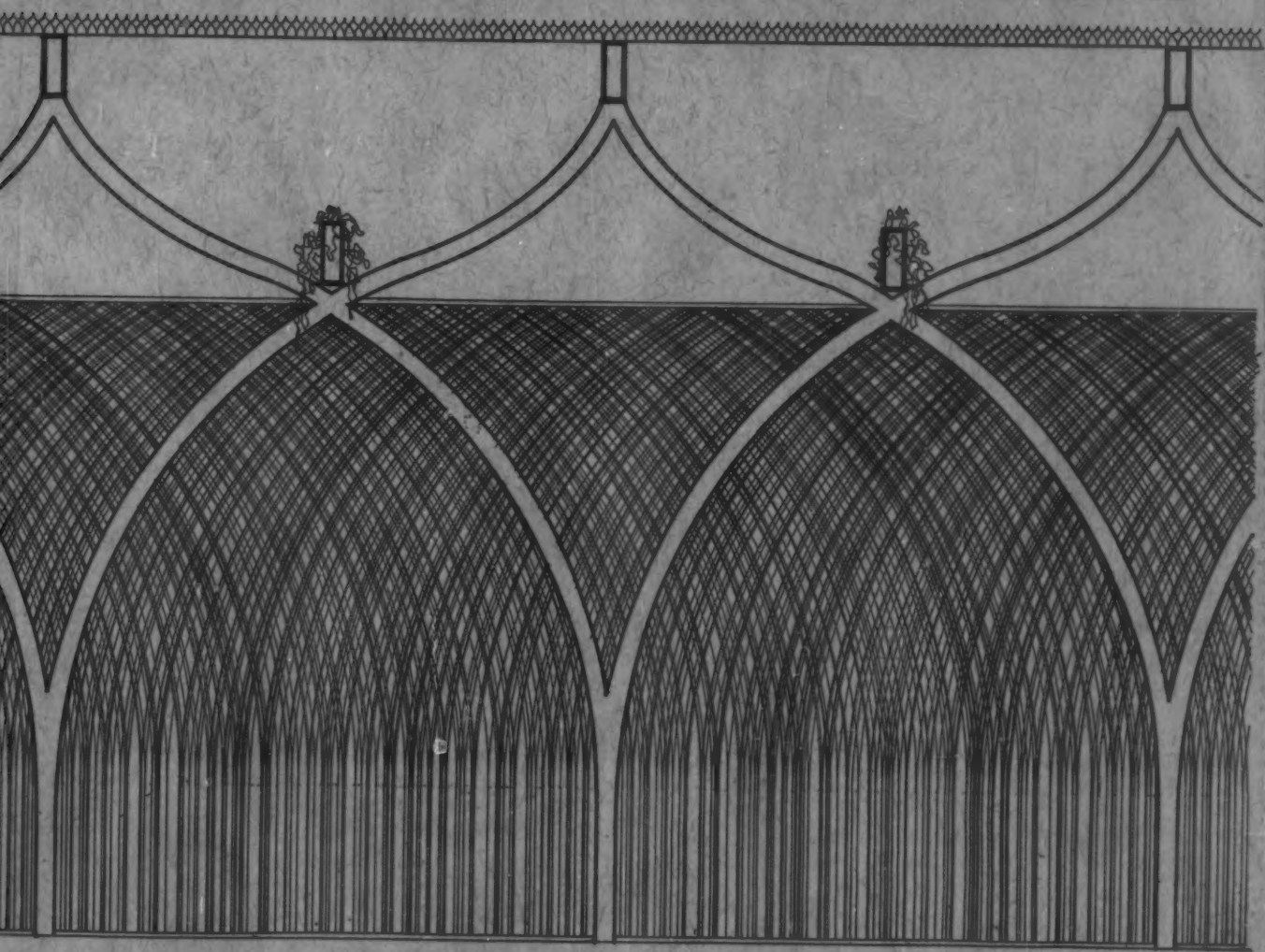
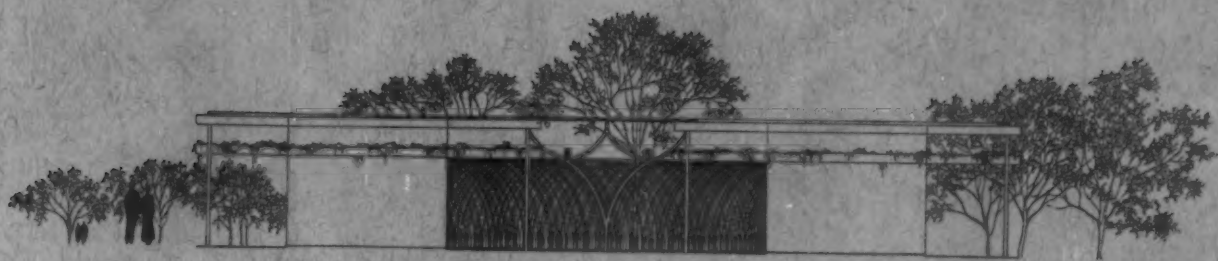
Fountain of Youth

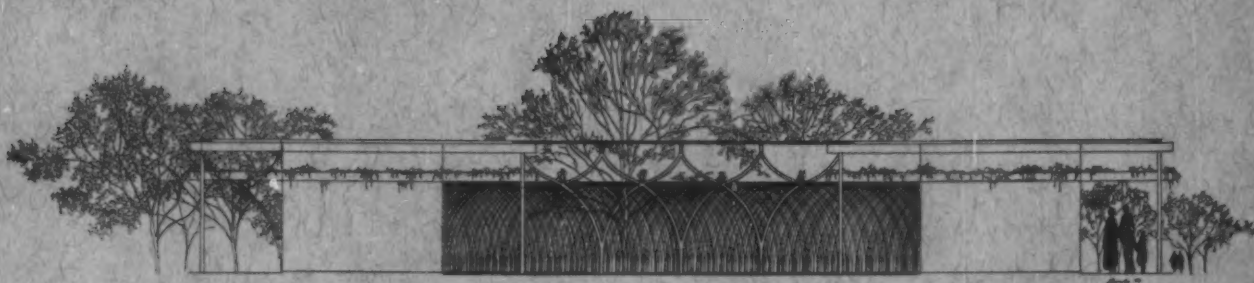
Above: arcade in elevation with etched glass wall behind it. Above right: section on the short axis.

Right: perspective showing relation of pavilion to lake and to surrounding landscape. New bathhouses will be hidden in the trees. Below: elevation detail. Glass wall behind laminated wood arcade is etched to the height of 8 ft in a pattern of random width lines which repeat the arch form. Clear glass is used from the 8 ft line to the roof.



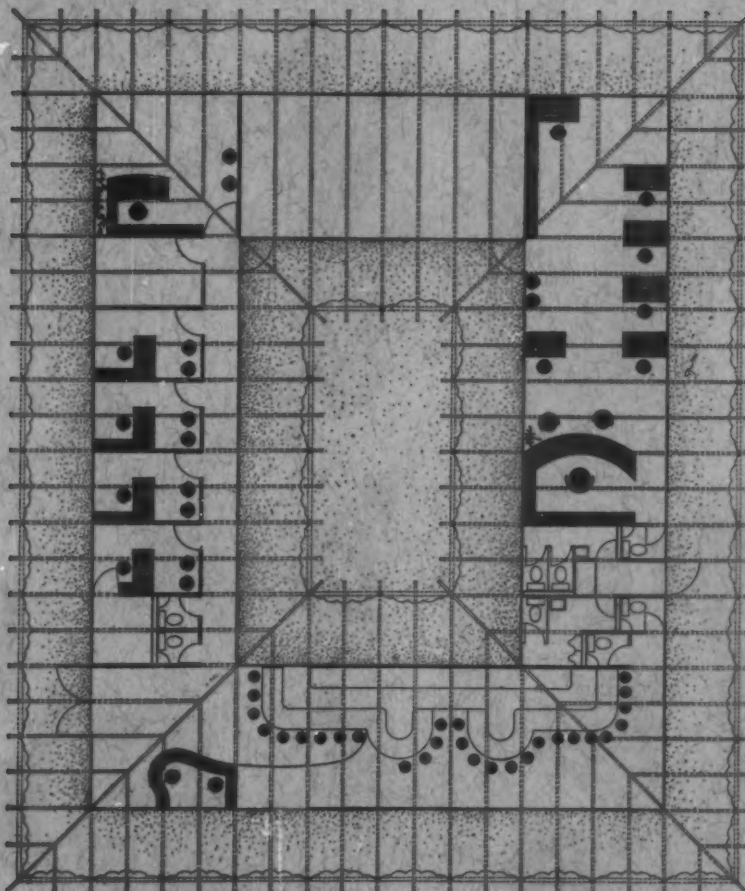
Lundy 77





Section through the courtyard on the long axis. Arches are of curved laminated wood and support two tiers of beams. The upper tier carries the roof, the lower tier supported at arch intersections holds hanging vines and concealed cathode lighting directed upward.

Plan shows exterior and interior arcades supporting rectangular laminated wood beams. The scheme forms an interior court surrounded by an enclosed space devoted to administrative functions, which includes an area where soft drinks and light lunches are served.



a hanging garden overhead and the scent of jasmine in the air. The exterior arcade will provide shelter from sun and rain.

The architect has described the structural scheme as follows: "...the outer and inner arcades are defined by the supporting lacework of light curved laminated wood arches arranged in scissored fashion ... by their sculptural shape, they echo the organic growing shapes of the surrounding trees. Structurally the laminated arches support two tiers of beams, the upper rectangular laminated wood beams that carry the roof, and a lower tier of hollowed out beams supported at the crossing of the scissored arches. The lower tier, 8 ft from the floor for human scale, carries hanging vines and also contains the cathode indirect lighting that shines upward and gives general lighting to the entire building."

Exterior walls are entirely of glass etched in a random arch pattern. These etched lines allow diffused light in, while still permitting those within to see out. The glass is clear on all exterior walls from 8 ft above the floor level to the roof. All interior partitions are 8 ft high (standard plywood dimension) with glass above. Thus from any point within the interior one may see the quality of the roof structure going through to the supporting order of continuous arches outside. One apprehends the building as a whole because he can see the entire roof. At night activities cease but the building will remain lit from within. Then the interiors become softly visible and the lacework of the exterior arches is dark and in silhouette.



Arts, Artists And Architecture

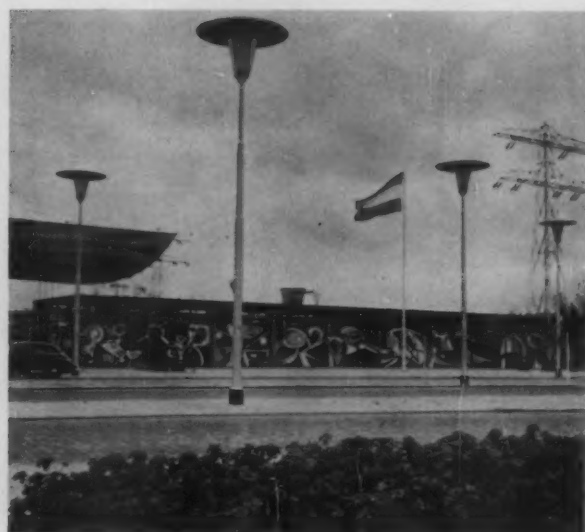
APPEL: Dutch Muralist

By Suzanne Burrey



1

1. Appel and young "assistant" studying scheme for the "Wall of Energy," a mural depicting man's increasing discovery and utilization of sources of energy (panel on air power, previous page). 2. Completed "Wall" as it formed the facade of Bakema's exhibition hall in Rotterdam. Painted on brick, the panels were man-height and extended 100 meters along one side of the building (eventually destroyed to make way for the new Rotterdam). 3. Garden Hall of the Stedelijk Museum, 1956. 4. Coffee-room of the Stedelijk, commissioned in 1951. Full of fantasy, the witty images of Appel's mural break across the limits of door frames, ceiling, and corners. "Since people spend only five minutes here," Appel said, "I wanted to make the space alive and entertaining."



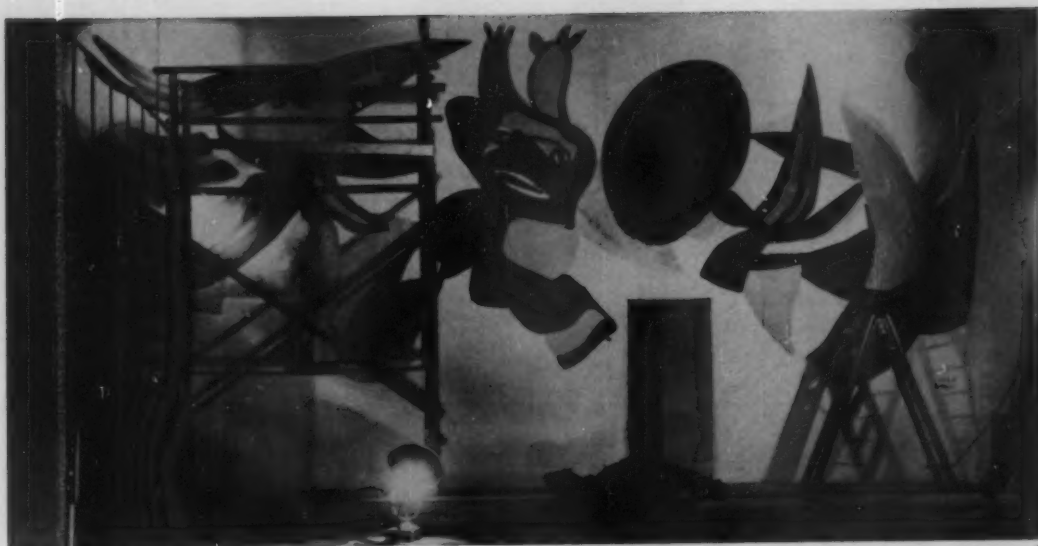
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Karel Appel, who is now preparing a mural that covers 600 square meters for the Brussels World's Fair, is a dynamic campaigner, through his words and his work, to extend the painter's role in architecture. Appel's campaign originated in his native Holland where he developed an approach which, he feels, applies the world over.

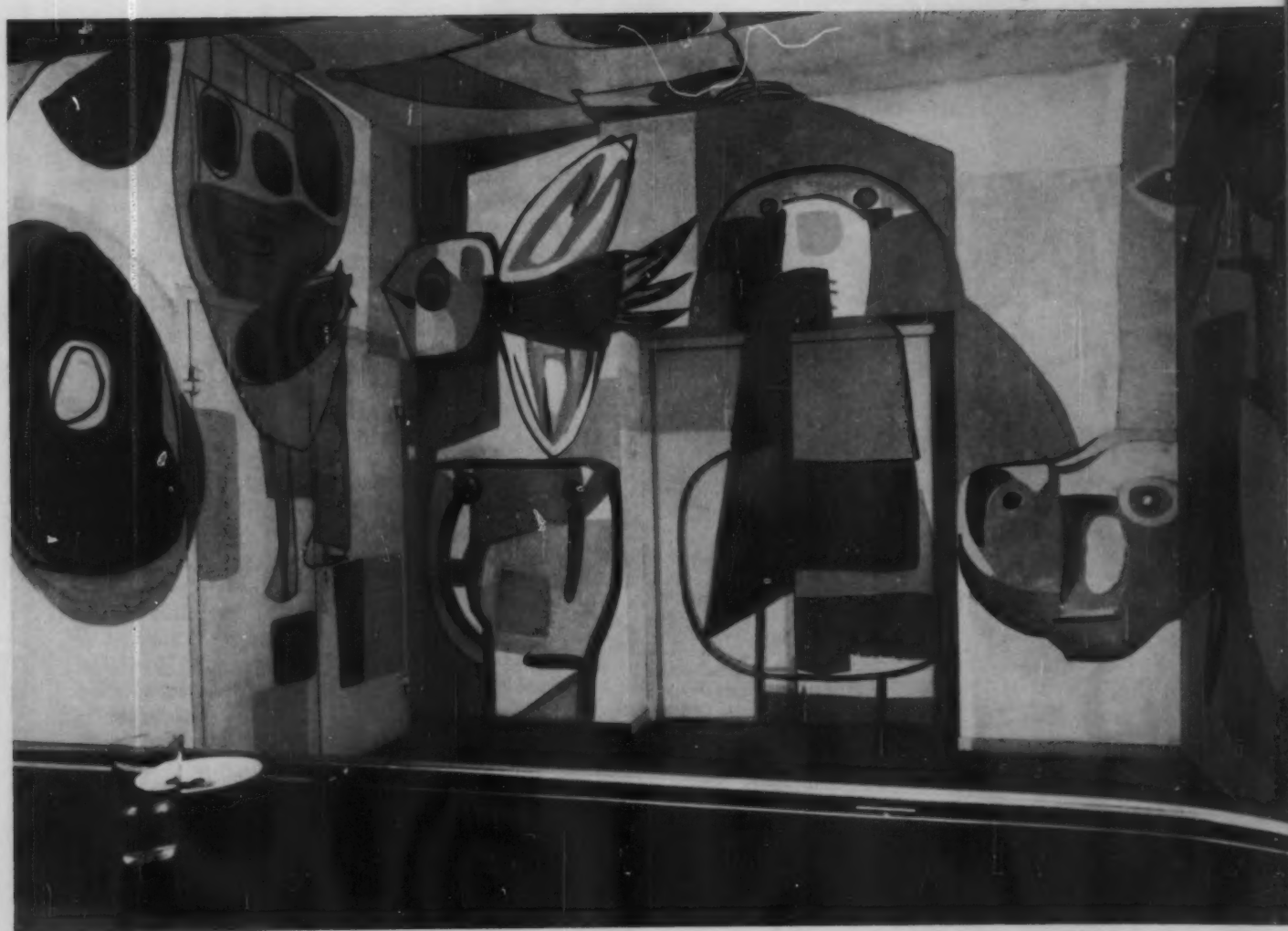
It is not enough for the painter to approach the building as a decorative problem—or to create a pictorial entity in a given area. The challenge is total, involving the entire building. "As a specialist in form and color in his own right, the painter should collaborate with the architect in the early stages of design to contribute fresh ideas in color and materials (where details and surfaces are concerned) in order to intensify the design of the three-dimensional space. If his work is complementary to the architect's concept of the building and so disciplined, ultimately the painter will help to make the structure more dynamic and individual."

Appel speaks from a desire to participate more fully in the community and in the growth of cities. This is true of many artists who have not been nearly as successful as Appel in winning opportunities to work with architects. The post war building boom of Holland's bombed cities shook the prejudices of those who would exclude all painting—and even color—from architecture. It is a revolutionary step in Holland from the austerity that was an outgrowth of the De Stijl movement to the winged structures of Bakema and the enormous expressionistic murals of Appel.

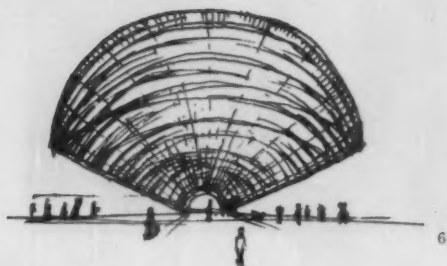
Appel's assertive art has been likened to the intense imagery of childhood and has won international recognition—though not without controversy. His first public mural (1949), in which he



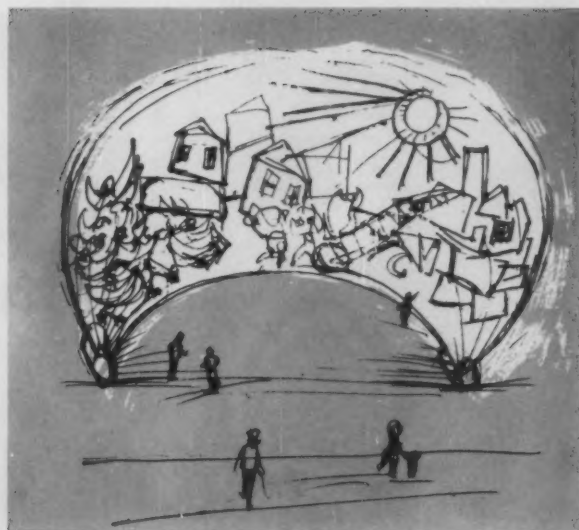
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5. Window for Van Kasteel's church in Geleen. In contrast to Appel's other work, the window is non-representational. The pieces of glass are three inches thick and are of strong, rich colors, creating powerful shafts of light and color in the nave. 6, 7. Sketches of mural for the foyer of the Dutch Pavilion, designed by Bakema, at the Brussels Fair. His latest commission, the mural echoes the fan shape of the entrance and covers some 600 sq. meters. It tells the story of Zeeland, that portion of Holland which is constantly being reclaimed from the sea.

Photos courtesy Martha Jackson Gallery

set out to make the Town Hall of Amsterdam "more alive," delighted the arts council who had commissioned it. But because some of the citizens objected to such fantastical figures on the Town Hall walls, and even threw cans at the mural, it was papered over. In reparation, the Stedelijk Museum (devoted to modern art) in Amsterdam has twice commissioned Appel. In the Garden Hall of the new wing, the painter's work went beyond the actual mural. The director's door below the mural is blue, and another door, yellow; the balcony is red, blue and copper. "Thus the room is one object, and wherever you go you find the same rhythm."

If he has painted a mural in an area, Appel believes the painter should also plan the adjacent or otherwise related colors. He must have this freedom if he is "to intensify the dynamics of the architectural design." When the problem is one of exhibition halls, such as the Hall of Energy and the Dutch Pavilion of the Brussels World's Fair (in which Appel is again collaborating with Bakema), his dynamic figurative painting tells a big story. In different circumstances, Appel has worked in an abstract mode and is fascinated by other color media, such as stained glass. For the window of a new church in Geleen, Holland, designed by Bart van Kasteel, he developed a special technique. Varying shapes of colored glass, some more than three feet long, are cemented together and set in a series of steel frames. These and the joints between the chunks of glass are not noticeable, so that the window becomes an integral part of the reinforced concrete wall. This too, is the particular contribution of the painter: by whatever means, to incorporate color and illuminate architectural space in an expressive way.

FACTORIES

BUILDING TYPES STUDY 254

®

In 19th century America, industrialists commissioned architects to design their country estates and office buildings, but not their factories, which were generally planned by others. Today that has changed; now, factories are usually designed by architects and the engineers that work with them.

The change can be attributed to a group of hardy architectural pioneers who successfully invaded this field early in the 20th Century, and as a result brought into being a new and improved kind of industrial building—one that added the further dimension of good architectural design to the basic provision of efficient function.

Important early examples include—among others widely published: Peter Behren's buildings for GE in Berlin, the plants at Alfeld by Walter Gropius, the Van Nelle tobacco factory in Holland by Brinkman and Van der Vlugt, a number of American factories by Albert Kahn, and the buildings by the TVA architects.

Such structures served as important milestones and exerted a wide and beneficial influence in the shaping of a receptive climate for contemporary industrial architecture.

As we consider factories today—in 1958—it seems appropriate to question whether or not today's examples have in reality moved further along the road toward the ultimate factory—or to inquire if they have changed only in superficial aspects.

There is evidence of real progress; especially in connection with certain specifics. Plans have opened up—become freer—there is less of the "box" kind of thinking. Architectural expression has become richer—more mature—even when it sometimes lacks the bold vigor of certain of those forthright early examples. Today, with our increasingly industrialized construction techniques, buildings can be put together more

quickly. These factors are all to the good, but can scarcely be described as basic.

At the root, however, is the increasingly evident change in thinking as regards the larger relationship between factory and environment. Architects and industrialists alike are conscious of this relationship, so that the factory is moving out of the back alley to assume a more appropriate guise in a more favorable situation. Here is a consideration filled with meaning; for the skillfully designed factory that rests easily and appropriately in its setting and becomes a source of pride to local citizens, workers, and owners can noticeably improve the appearance and morale of an entire community. If this concept spreads then cityscapes and countrysides will benefit.

The physical comfort and well being of the factory worker have been the subject of considerable study, and significant benefits have resulted. In many cases, employees now work in air conditioned, well lighted, appropriately colored surroundings; handle machinery and equipment that has been exhaustively analyzed and improved to prevent accidents and promote efficient, more effortless production. Much of the hazard and drudgery of materials handling has been eliminated and that process has become largely a mechanical one. Attractive and inviting facilities for luncheon, relaxation, and employees' social functions are becoming almost the rule. All of these comforts and amenities result in improved morale and greater productivity and pride in company, and appear—when added together—to constitute a second basic improvement.

The five factories presented in this study have each made a strong contribution in one or more of the directions noted, and therein lies their importance.

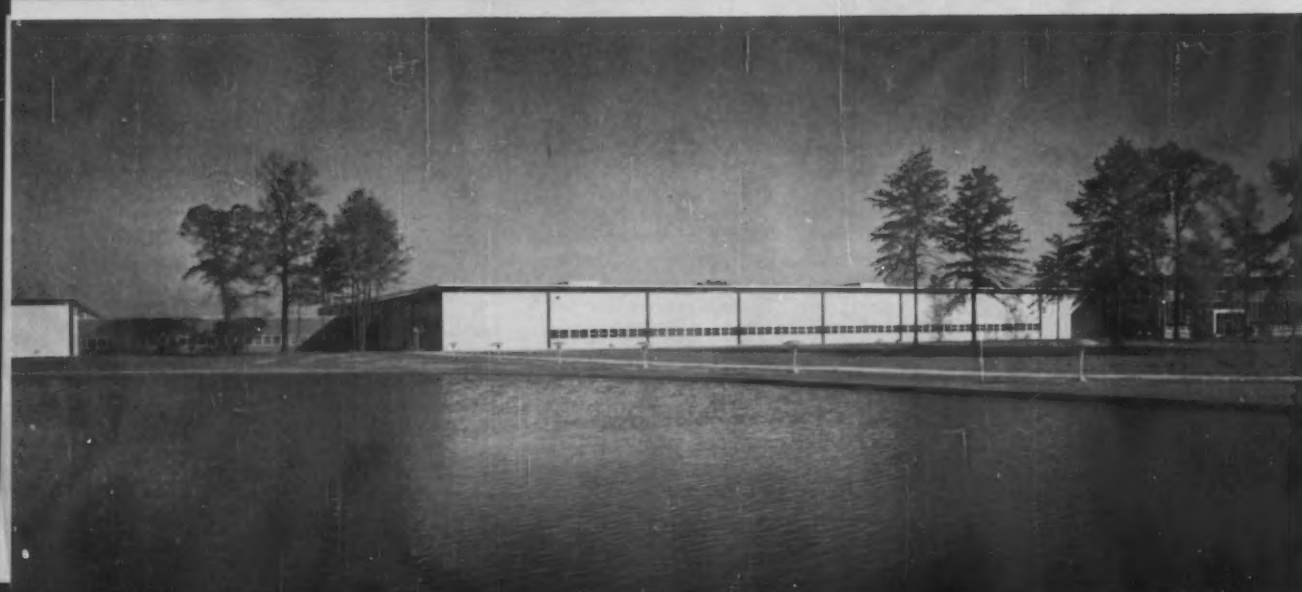
—JAMES S. HORNBECK, A.I.A.



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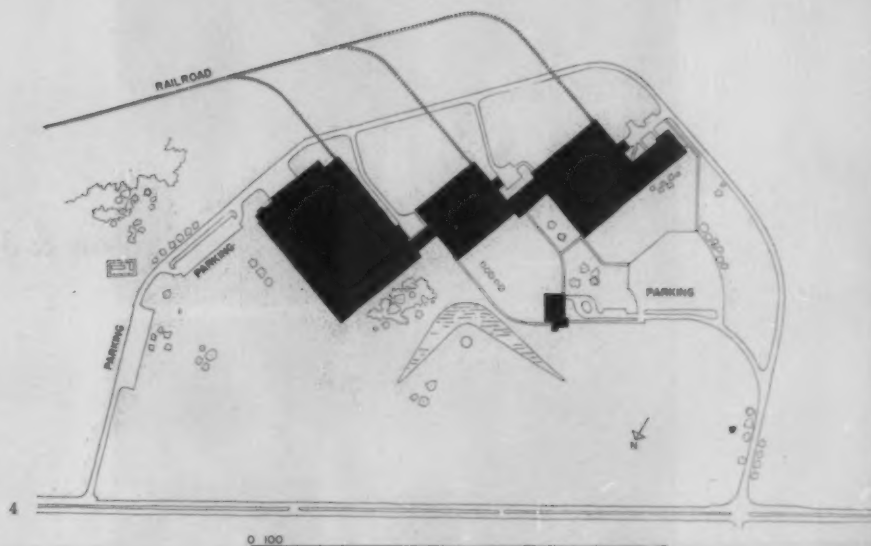
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The entrance and cafeteria building (1) shown also on the cover in color, features walls of yellow glazed brick; as well as screens of aluminum and glass. Future plans call for adding an administrative headquarters office building to this unit.

The maintenance shops and offices (2) occupy a two-story building at the extreme southern end of the grouping.

The west facade of the baby products unit (3) seen across the lake from the highway.

Those responsible: for J & J, C. V. Swank, Vice President, Manufacturing; L. J. Bardley, Assistant to Vice President, Manufacturing; Nason Manley, Director of Construction Services. For Walter Kidde, Frank L. Whitney, Vice President; Walter L. Hough and Carl F. Bauer, Project Architects; John Faas, Chief Mechanical Engineer.



New Jersey: Surgical Dressings Plant and Shipping Center

*Surgical Dressings Plant,
Johnson & Johnson,
North Brunswick, New Jersey*

*Walter Kidde Constructors, Inc.,
Designers and Builders*

Jean Labatut, Landscape Consultant

Johnson & Johnson, long known for an enlightened approach to building design and landscaping, have recently found themselves in an expansion squeeze, with demands for more space exceeding the physical potentials of their older plants and sites. Hence, a new approach to factory planning, exemplified in this group and explained at some length in *ARCHITECTURAL RECORD* for February, 1956, pp. 182-189.

Briefly, the scheme separates the several industrial operations into separate buildings (shipping center, baby products, plaster mill, maintenance shops) which are then linked at their diagonal corners by pertinent office units—see plan, p. 154. The whole is then laced together by a continuous dragline for material flow through the plant and fed by separate rail and truck access points. This means that any operation—scaled to its needs and its workers—can expand sideways in two directions without disturbing the existing machines, the offices, or the adjacent operations; and also makes possible divisional autonomy for the company.

Johnson & Johnson



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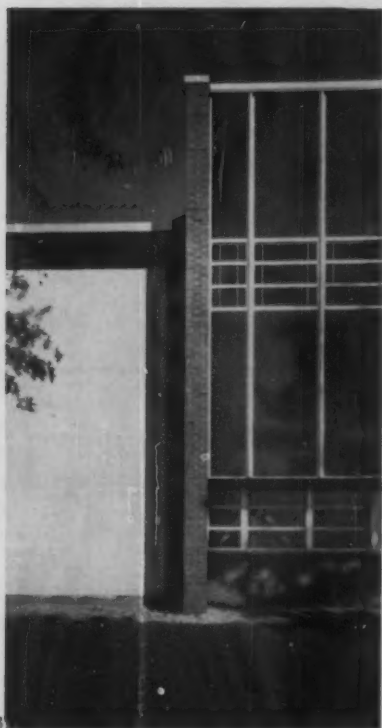


Joseph W. Molitor

7

Fenestration follows several patterns, determined both by the owner's philosophy and by orientation. On west facades, there are eye-level strips to obviate claustrophobia and provide emergency ventilation; on the south, ribbons at the roof provide visual separation and natural lighting, with louvers organized within the strips; on the north and east, ribbons at the roof are combined with vertical panels at the columns for view and ventilation. Blowout panels are provided on certain east walls. All the sash are glazed with an imported blue glass for both economy and glare reduction.

The block walls sheathing the 600,000 sq ft plant are predominantly finished with white stucco, while the metal fascias and columns are clad with royal blue porcelain enamel. Occasional panels of vivid red glazed brick provide color accents here and there.



Exterior views, these pages: (5) the maintenance building, with red brick panel in the foreground; (6) detail of the east juncture of baby products unit and plaster mill; (7) the plaster mill from the other (west) side.

The lobby of the entrance and cafeteria building, (8), (9), and (10) features a Venetian glass mosaic and stained glass panels, designed and executed by Max Spivac. The mosaic tesserae are set in a bed of white cement, containing marble and tile chips for texture. The panels of stained glass are set in black-lacquered aluminum channel frames, making them transportable, unlike most such constructions.

(11) and (12) are views, respectively, of the outgoing truck docks in the shipping center and the interior of the plaster mill.

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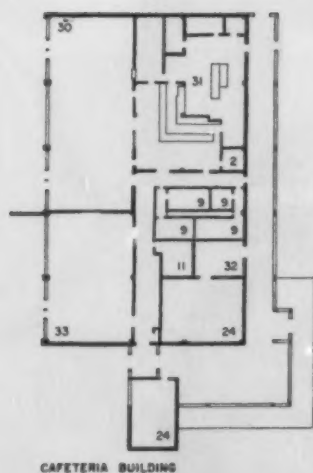


12



SHIPPING CENTER

0 20



- | | | |
|----------------------|---------------------|--------------------------|
| 1. Conference Room | 12. Shipping Area | 23. Mill Room |
| 2. Office | 13. Railroad Siding | 24. Equipment |
| 3. Scheduling | 14. Maintenance | 25. Raw Stores |
| 4. Billing | 15. General Office | 26. Slitting & Finishing |
| 5. Truck Dock | 16. Ortho Products | 27. Auto Repair |
| 6. Will Call Pallets | 17. Ortho Products | 28. Carpenter |
| 7. Men's Lockers | 18. Packaging Area | 29. Boiler Room |
| 8. Lunch Room | 19. Shop | 30. Cafeteria |
| 9. Toilets | 20. Lab | 31. Kitchen |
| 10. Loose Goods | 21. Sterilizers | 32. Mail Room |
| 11. Storage | 22. Base Sealer | 33. Meeting Room |

Efficiency of materials handling and expansibility provisions for factory and warehouse areas primarily determined siting of the buildings at Johnson & Johnson. For a number of reasons, the designers departed from the large single-building concept—one of them being convenience in the delivery and storage of raw materials.

With one building "split" into three, heat distribution lines became quite long: the whole system entails several miles of pipe, one run being 3000 ft from the boiler plant. This was a contributing factor in the selection of high temperature water over steam.

Materials Handling

Supplies are brought in by rail on three separate spurs so that raw stores not only can be unloaded close to the spot where they will be used, but each manufacturing operation can be fed materials as needed without interfering with other operations, and freight cars themselves can serve as "warehousing." Truck docks are nearby.

Stretching out the buildings would have made internal materials handling practically impossible for fork lift trucks since operators would spend most of their time in travel. But to a dragline conveyor, it doesn't matter whether its length is arranged in a compact sinuous pattern, or whether it is stretched out in a long continuous loop; conveyor trucks come by as frequently as subway trains.

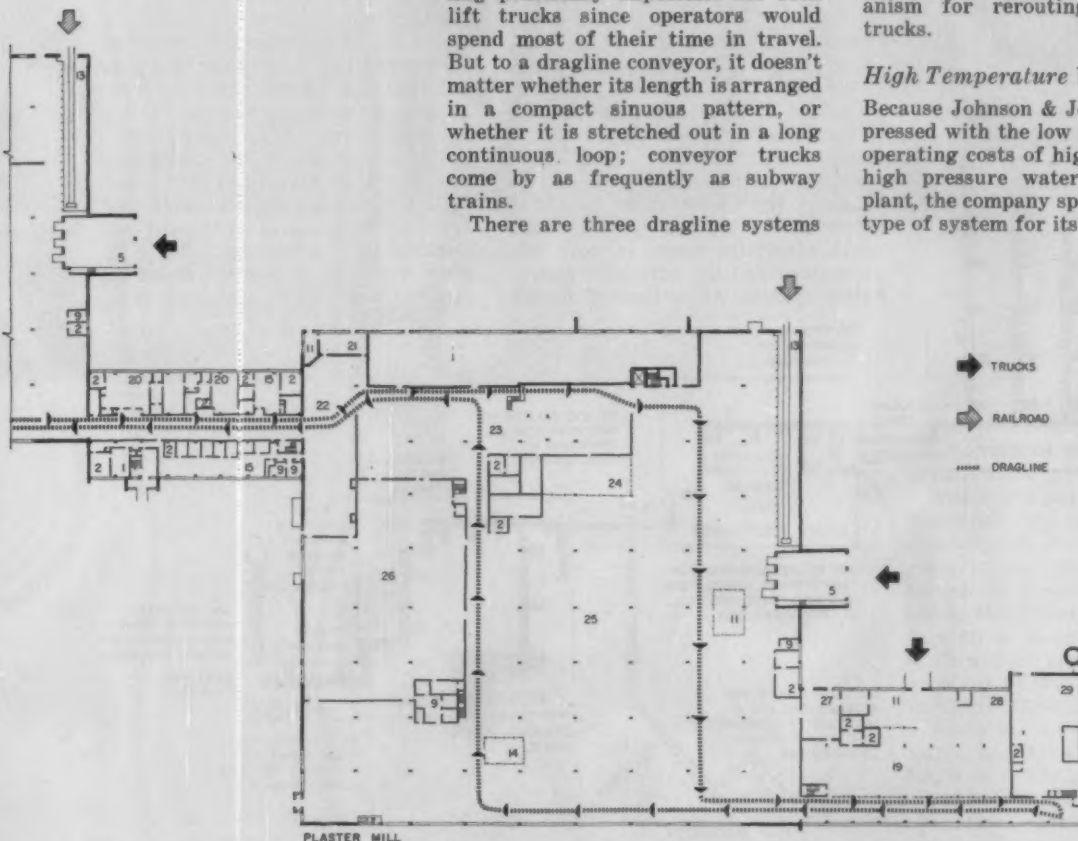
There are three dragline systems

in the J & J plant. One 3624-ft system runs through the manufacturing operations to the shipping center and back. The second consists of two parallel units, each about 1850-ft long, which are used in the order makeup section of the shipping center to take palletized loads to the truck docks. The third is a small 103-ft closed loop (see curved arrow) which reroutes trucks so they will not enter the shipping center, but will continue to circulate through manufacturing areas.

Each conveyor truck is equipped with an electronic "memory." Twelve positions on a selector switch key twelve different oscillator frequencies on a small transmitter. There also are single-frequency oscillators under the floor at selected locations, each corresponding to one of the truck oscillator frequencies. As a conveyor truck approaches a position with under-floor oscillator sending out the same signal as the truck, the two oscillators are in resonance, and this triggers either a light or bell to warn a worker at the receiving station. When the truck arrives, a worker disengages it from the tow line. In addition one position on the selector initiates the switching mechanism for rerouting of conveyor trucks.

High Temperature Water

Because Johnson & Johnson was impressed with the low installment and operating costs of high temperature-high pressure water in an earlier plant, the company specified the same type of system for its manufacturing



Johnson & Johnson

Joseph Molitor



In the shipping center, two dragline conveyors transport orders. Unit ventilators are up out of the way inside the monitors

center at North Brunswick. This high temperature water system provides four definite advantages:

1. Uniform distribution of heat, independent of fluctuation in boiler pressure.
2. Reduction in size of piping and boiler plant.
3. Elimination of steam traps and pipe grading.
4. Elimination of condensate pipeline corrosion.

Thermodynamically, high temperature water has one big advantage over steam: a given volume of water can carry more heat units than a similar volume of steam. For instance, at 400 F and 250 psi a cubic foot of water has a total heat content of about 20,000 Btu, while a cubic foot of steam has only about 650 Btu. Water thus carries some 35 times as many Btu as steam at this temperature and pressure.

In high temperature water systems, the water is always under pressure to prevent flashing to steam. Distribution can be in the form of high temperature water direct from the boiler; lower temperature water through use of heat exchangers; or as steam, using flash converters.

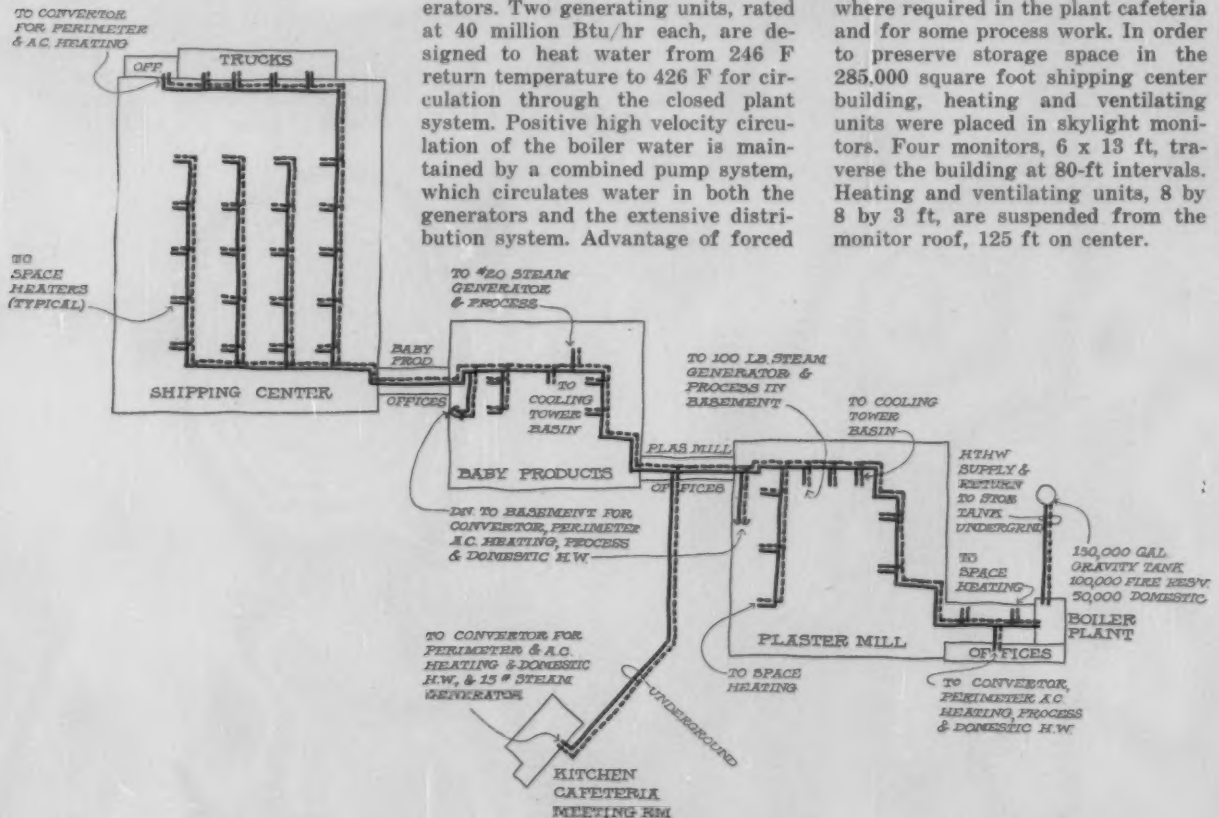
System design began with boiler selection. The plant is believed to make the first industrial use of forced recirculation hot water generators. Two generating units, rated at 40 million Btu/hr each, are designed to heat water from 246 F return temperature to 426 F for circulation through the closed plant system. Positive high velocity circulation of the boiler water is maintained by a combined pump system, which circulates water in both the generators and the extensive distribution system. Advantage of forced

recirculation lies in high heat absorption per unit area.

From the generators and expansion tank, 426 F hot water is pumped under 426 psi pressure to the system (326 psi static head, plus 100 psi discharge pressure of circulating pumps).

Total calculated load of the plant heating system is 63 million Btu of which 12 million is process heating. For the greater part of the year, it is estimated that one generator will carry the full load, with the other serving as standby. During severe weather, both will operate. Hot water is used in three ways throughout the plant: (1) direct through coils; (2) as "low temperature" (240 F) water; and (3) as steam for process work.

Wherever possible within the plant, hot water is used direct. One such application is in heating and ventilating units and unit heaters in the factory sections. Hot water is also used directly in the cooling tower to maintain minimum wintertime temperature (process cooling is needed year-round). Direct heating is used also in air conditioning equipment in parts of the plaster mill. Lower temperature water is used for perimeter heating, at the gravity tank to prevent freeze-up, for process heating and for most air conditioning. Flash converters provide steam where required in the plant cafeteria and for some process work. In order to preserve storage space in the 285,000 square foot shipping center building, heating and ventilating units were placed in skylight monitors. Four monitors, 6 x 13 ft, traverse the building at 80-ft intervals. Heating and ventilating units, 8 by 8 by 3 ft, are suspended from the monitor roof, 125 ft on center.



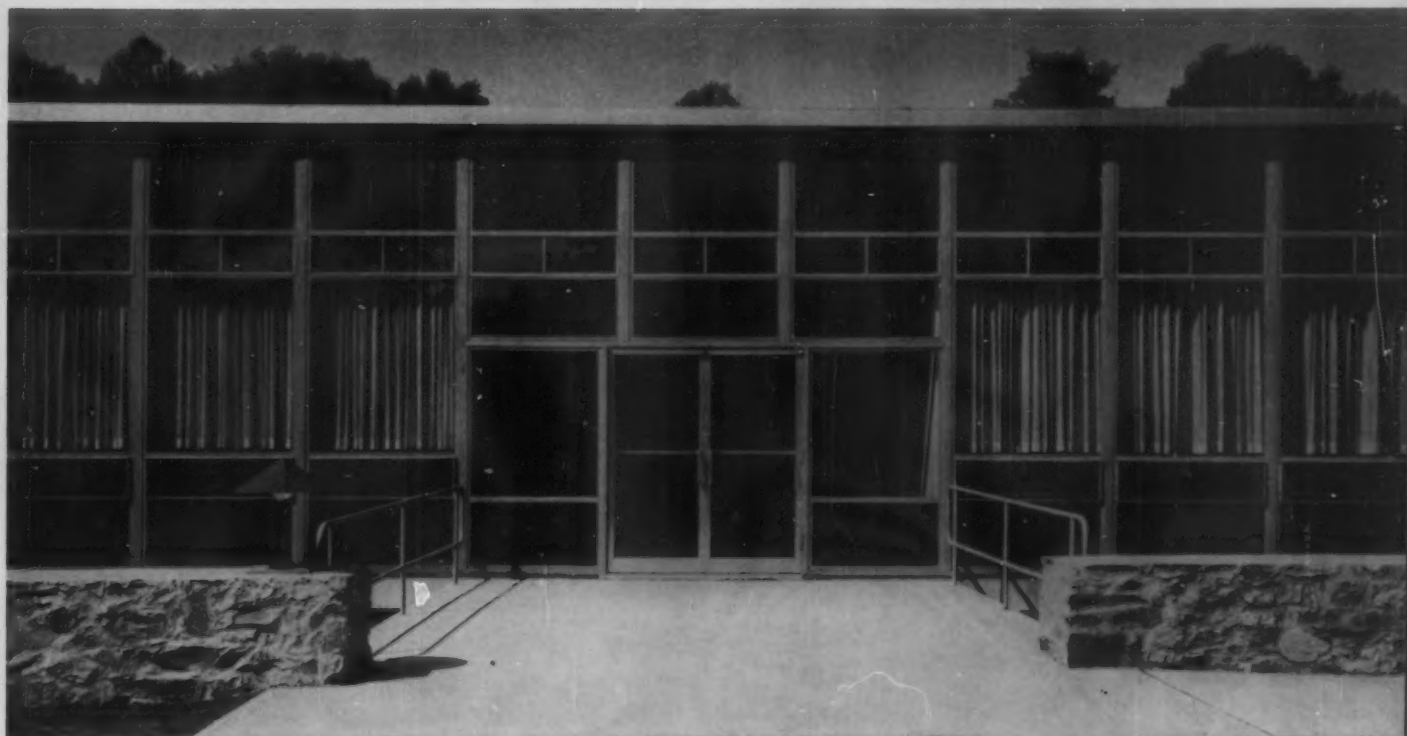
Connecticut: A Rural Factory for Ethical Cosmetics

*Duke Laboratories, Inc.,
South Norwalk, Conn.*

*Harrison & Abramovitz,
Architects*

*Jarcs, Baum & Bolles, Mechanical En-
gineers; E. E. Ashley, Electrical En-
gineers; Edwards & Hjorth, Struc-
tural Engineers; Clarke & Rapuano,
Landscape Architects*

The flavor of the Connecticut hills
lies about and pervades this plant,
where the workers—whether inside
or out—can always see the oaks and
hickories and birches and dogwoods



Ben Schnall



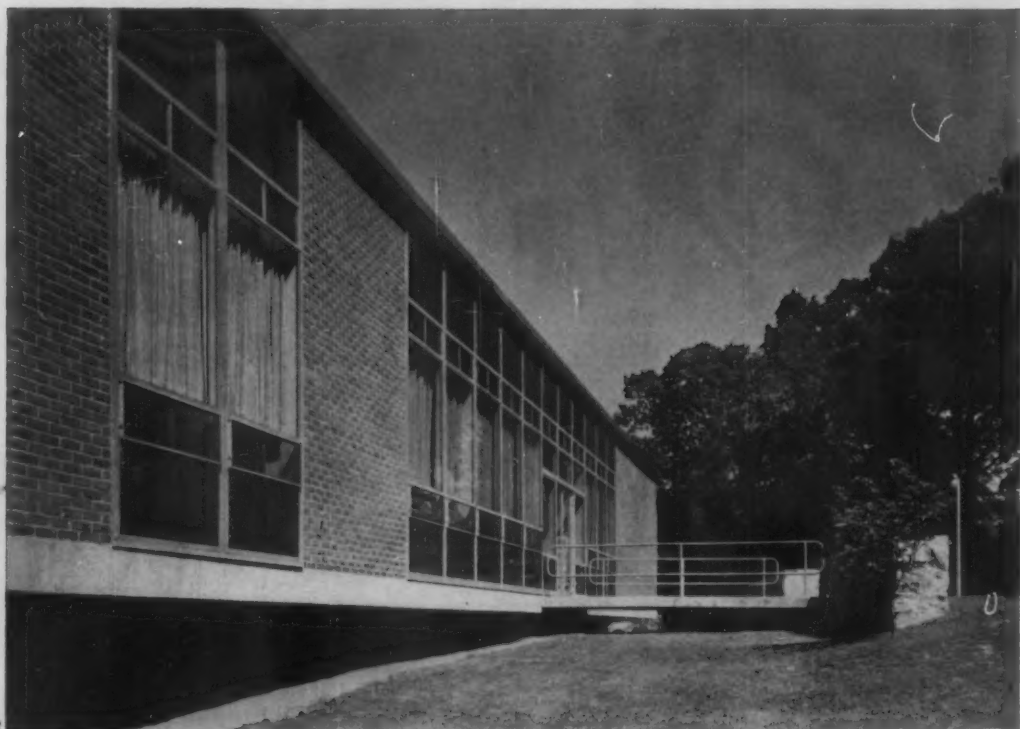
on every side. John Ruskin—great
critic of 19th century industrial
abuses—might well approve this kind
of neotechnic sylvan development.

Architects and owner were equally
concerned with preserving the virgin
character of the hilly 24-acre site.
As a result, the building was con-
ceived as a platform floating free
above the grade, which could then
flow up or down beneath, according
to its natural configuration. Visitors'
access is by way of a bridge, shown
in the photograph above.

Founded in New York nearly 30
years ago by Carl J. Herzog and
Paula von Klein, the company spe-
cializes in adhesive surgical band-
ages and ethical cosmetics, distri-
buted only through the medical and
allied professions.



1

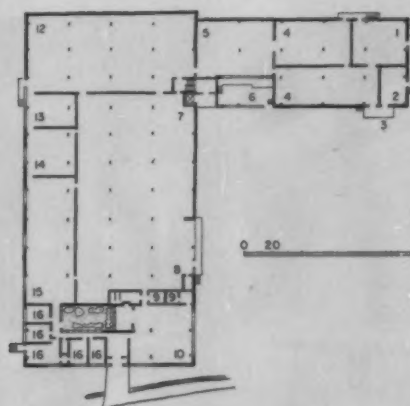


2



3

These photos point up the "platform" concept of the scheme, and show also the unevenness of the natural grade, left undisturbed.



1. Mass-Mix
2. Rubber Mill
3. Trucks
4. Coating
5. Rolling
6. Boiler Room
7. Storage
8. Rubbish
9. Toilets
10. General Office
11. Files
12. Packaging
13. Lab
14. Cream & Oil
15. Packing
16. Office



Ben Schnall

The plan, above, is in essence a U-shaped group of office, packaging, and manufacturing areas wrapped about a central warehouse and shipping core that works—by forklift—both inwards and outwards. The extended wing houses the flammable operations connected with the coating of adhesive bandages.

Duke Laboratories

1. View from the entrance walk across the parking area towards the adhesives wing.
2. Shows the front office portion, with the visitors' bridge now in side elevation.
3. The rear of the plant, looking along the adhesives wing towards the packaging area in the main factory block beyond.
4. The view through the trees toward the plant one sees as he approaches.



5



6



7



8

Duke Laboratories

In the office areas (5), the walls are plaster, painted; the ceilings acoustic tile; and the floors asphalt tile. The general office is shown above. In the packaging and bottling departments (6) and (7), there are acoustic tile ceilings; walls of glazed facing tile; and cement finish floors. In the adhesive plaster coating and slicing sections (8), the floor is of the conductive type, due to the fire hazard.

The basic structural frame of the building is steel post and lintel, with structural floor slab and concrete plank roof. The sash are painted steel, glazed with ultra-violet absorbing flat drawn glass. The structure is sprinklered throughout.

Ben Schnall

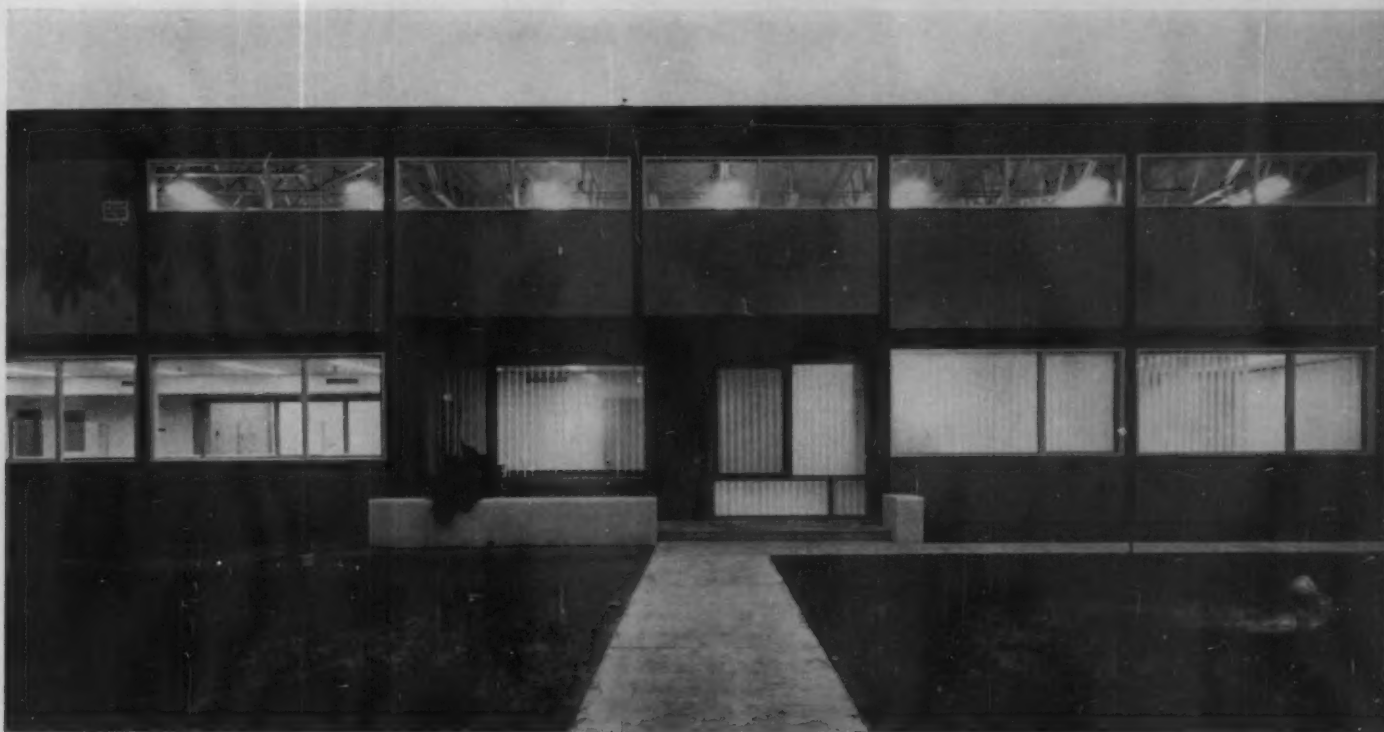
Near Los Angeles: A Western Branch Plant for Fan Manufacture

*Torrington Manufacturing Co.,
Van Nuys, California*

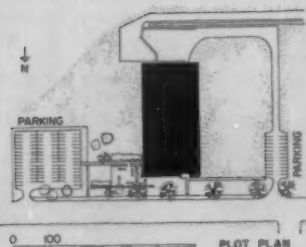
*Marcel Breuer & Associates,
Architects*

*Craig Ellwood, Supervision; Farkas
& Baron, Structural Engineers;
Mackintosh & Mackintosh, Engineer-
ing Consultants; Ralph E. Phillips,
Mechanical & Electrical Engineers;
Eric Armstrong, Landscape Archi-
tect*

Situated on a site with a railroad at
the rear and a highway along the
front, this factory holds several
points of architectural interest.



Marvin Rand



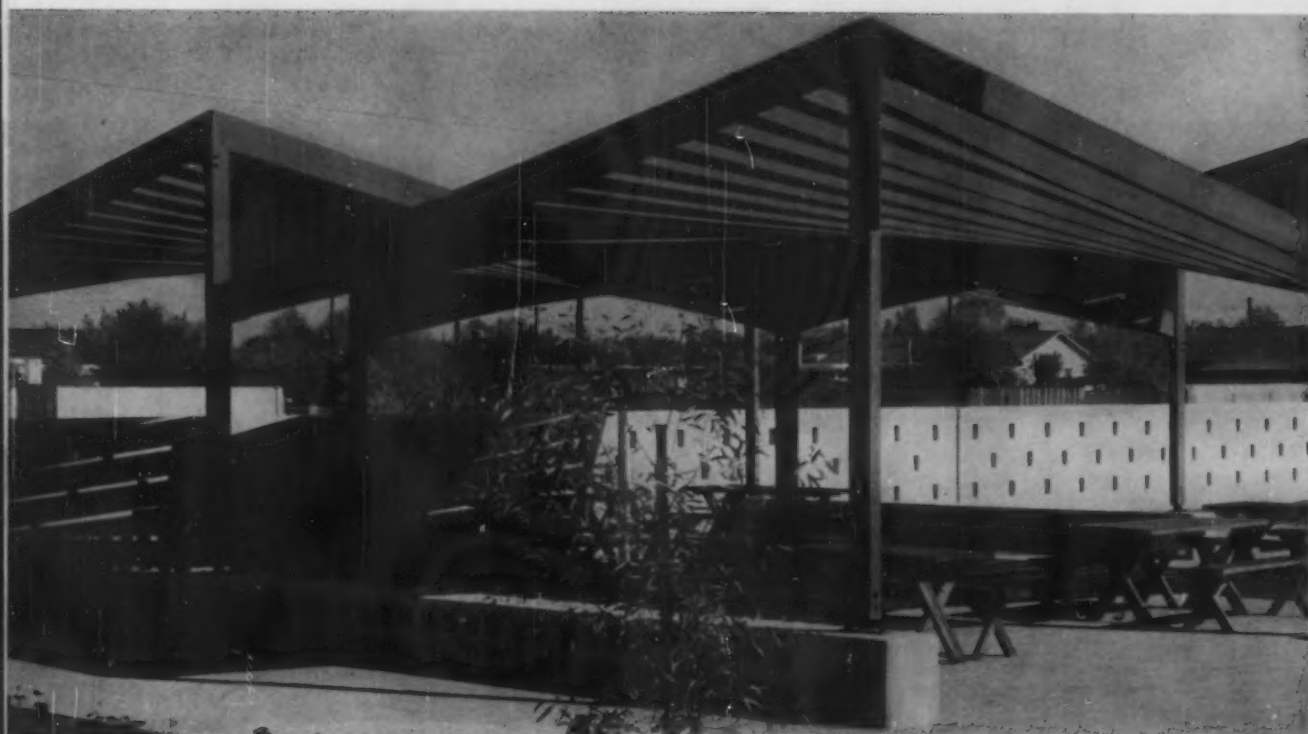
Principal of these is its triple ex-
pansibility; made easy by removable
walls on the two long sides of the
building. These walls—of aluminum
and glass—can be readily re-erected
in their new positions. Ground area
for three new bays on both sides of
the plant is planned into the scheme;
thus the present area of 45,000 sq ft
can be expanded in increments of
15,000 sq ft to an ultimate area of
135,000 sq ft.

The end walls—which will remain
as the plant expands sideways—are
of masonry, and consist of concrete
block infilling for the exposed steel,
painted charcoal gray. Shown above
is the facade adjacent the highway.
The sash are painted white; the en-
trance door vermillion.



1

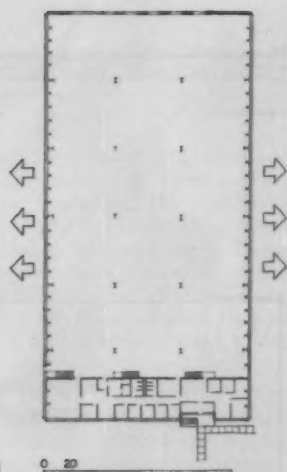
*A Workshop for the
Torrington Branch
of the Torrington
Manufacturing Co.*



2

Marvin Rand

Torrington Manufacturing Co.

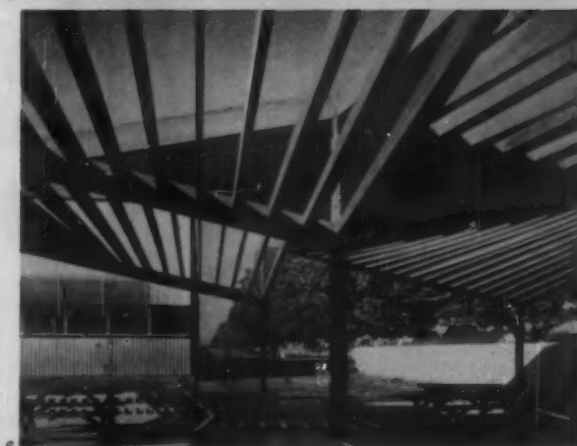


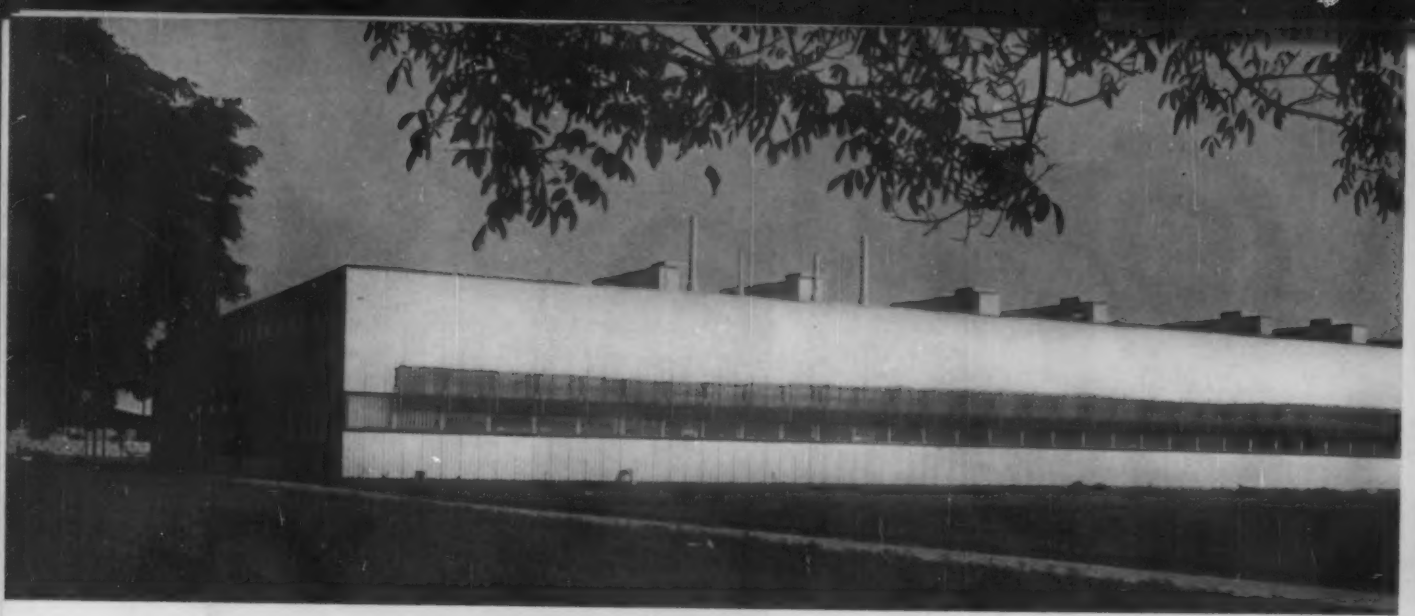
The plan (3) follows a regular pattern of 50-ft square bays, with the open-span roof joists alternating direction in a checker-board arrangement, which provides a uniform beam depth overhead as well as large areas of clear space for manufacturing. Arrows indicate the direction of expansion.

A point of major interest is the outdoor picnic area, where employees can eat their lunch in favorable weather. Sun protection is provided by a gazebo of natural redwood, (2) and (6), interestingly formed of hyperbolic-paraboloid sections joined into several interlocking umbrella-like shelters. The gazebo can be dismantled in sections—and re-erected—as the plant expands.

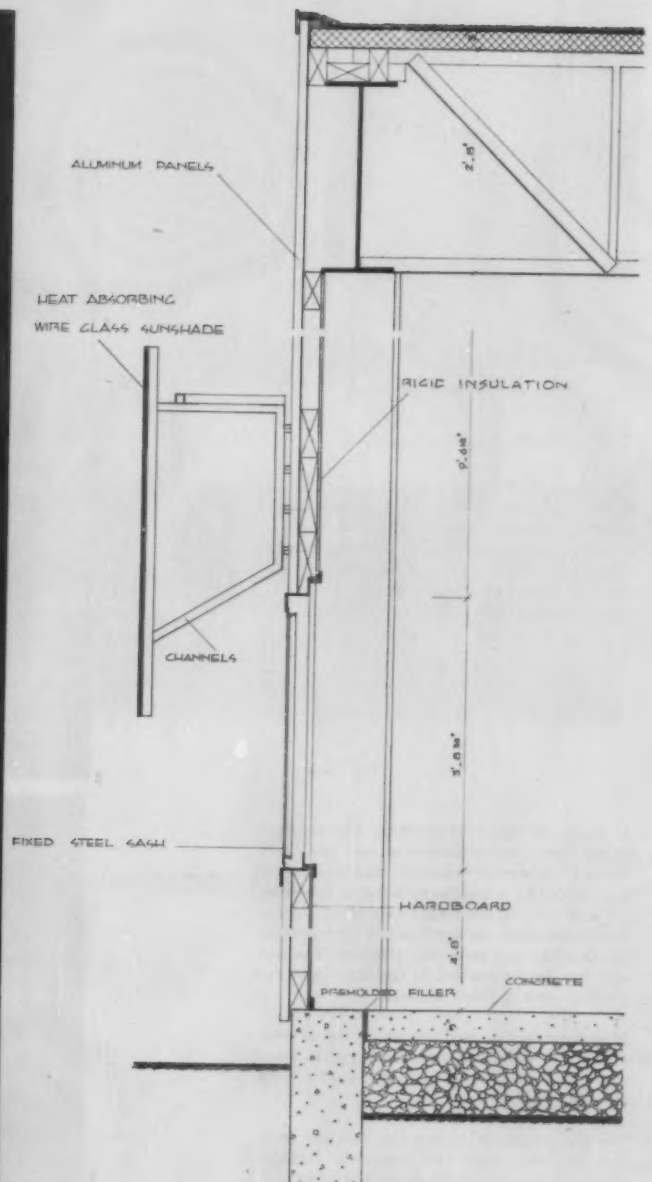
Photographs (4) and (5) show the removable side walls of aluminum, with free-standing sun shades of blue-green heat absorbing glass.

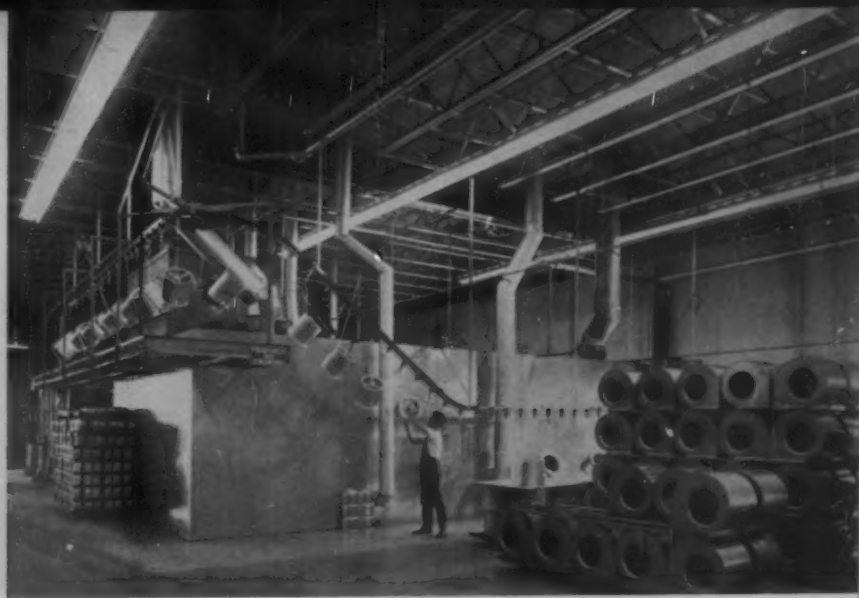
The night view (7) shows the building from the highway, and the entrance through which visitors enter the reception lobby (1).





Marvin Rand





Torrington Manufacturing Co.

Accent: Engineering

Expansion, coupled with the necessary provisions for earthquake resistance, keyed the engineering design for the Torrington plant—the former sparking such features as a removable, re-usable exterior wall assembly; the latter a “checkerboard” roof framing plan that adds rigidity and subtracts steel tonnage.

Foundation and Structure

The foundation design, complicated by the sandy, silty loam found on the site, was based on the decision to design for a reasonable settlement rather than to sink piles or caissons down to the firmer soil 20 ft below. Accordingly, the spread footings for the columns were placed with their bases only 3 ft below grade. A grade beam runs around the entire building perimeter, and the 5 in. slab is laterally tied to the interior piers. The calculated settlement was $\frac{3}{4}$ in., two-thirds of which was expected to occur during construction. (It did.) As a further precaution, the soil under the exterior footings on the east and west walls was power-tamped to reduce settlement when the plant additions are built.

Given a predetermined bay size of 50 ft in both directions, the engi-

neers developed a “checkerboard” roof frame which increased the rigidity of the structure—and made it possible to span the bays with beams that would otherwise have spanned only 30 ft. The beams—all the same size, all equally loaded—frame into the columns from both directions and are braced diagonally by light steel angle ties. Between them are 32 in. long span joists which run in alternate directions in adjacent bays, forming the checkerboard pattern.

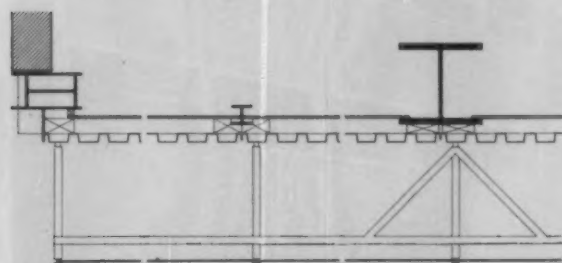
The movable side walls on east and west are fastened to the exposed welded steel frame by horizontal wood studs spanning between the 14 in. main columns and the 4 in. intermediate columns which serve dually as window mullions and bracing. Their exterior skin is of insulated aluminum panels; the interiors are finished with rigid insulation above the windows, hardboard below. The end walls, which will remain fixed, are of reinforced concrete block, anchored to the exposed columns.

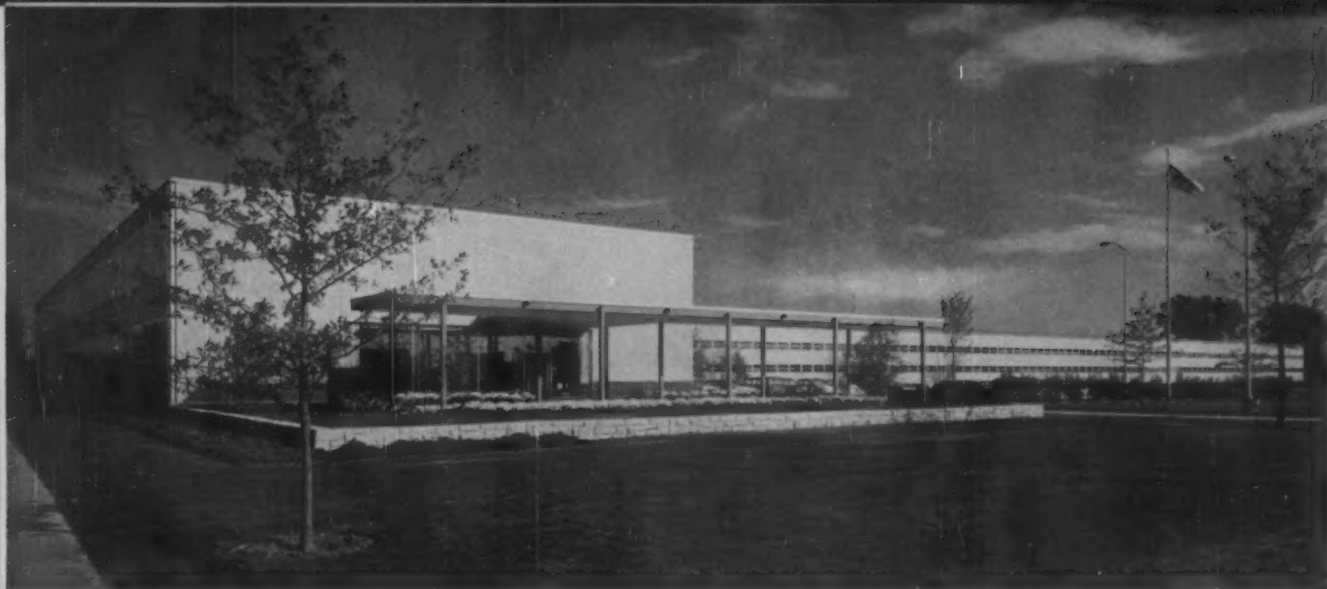
To reduce the cooling load, a sun shade was designed to span the entire western elevation of the building. As shown in the photo and section at left, the heat absorbing wire

glass is supported across the long strip of windows by a simple frame of steel angles and channels. This frame, in keeping with the emphasis on expansibility that characterizes the plant as a whole, can be easily detached—and bolted back in place when the wall has completed its projected step outward.

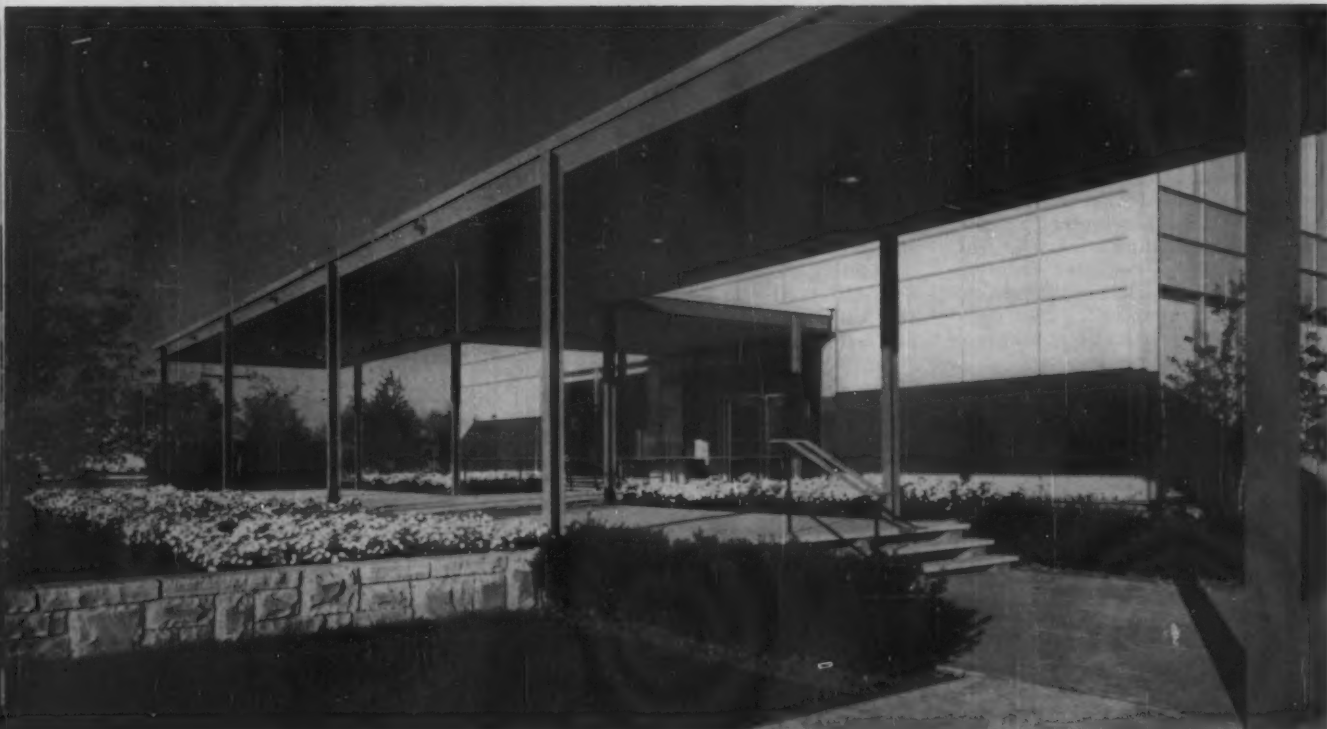
Heating and Air Conditioning

Because of the widely differing character of the two spaces, heating, cooling and ventilating for the office and manufacturing area were treated separately, with a built-up five zone system serving the offices. The factory area is heated with ten 155,000 Btu input, 1800 cfm output, unit ventilators suspended 11 ft from the floor (photo above right) and controlled by individual thermostats. Cooling is provided by twenty-two 15,000 cfm evaporative coolers, located on the roof as shown above left, which operate in conjunction with eight 25,000 cfm power roof exhausters. According to the mechanical engineers, the unusually large volume of air was made necessary by the high internal heat gain from the 880 KVA electric load used to operate the production lines.

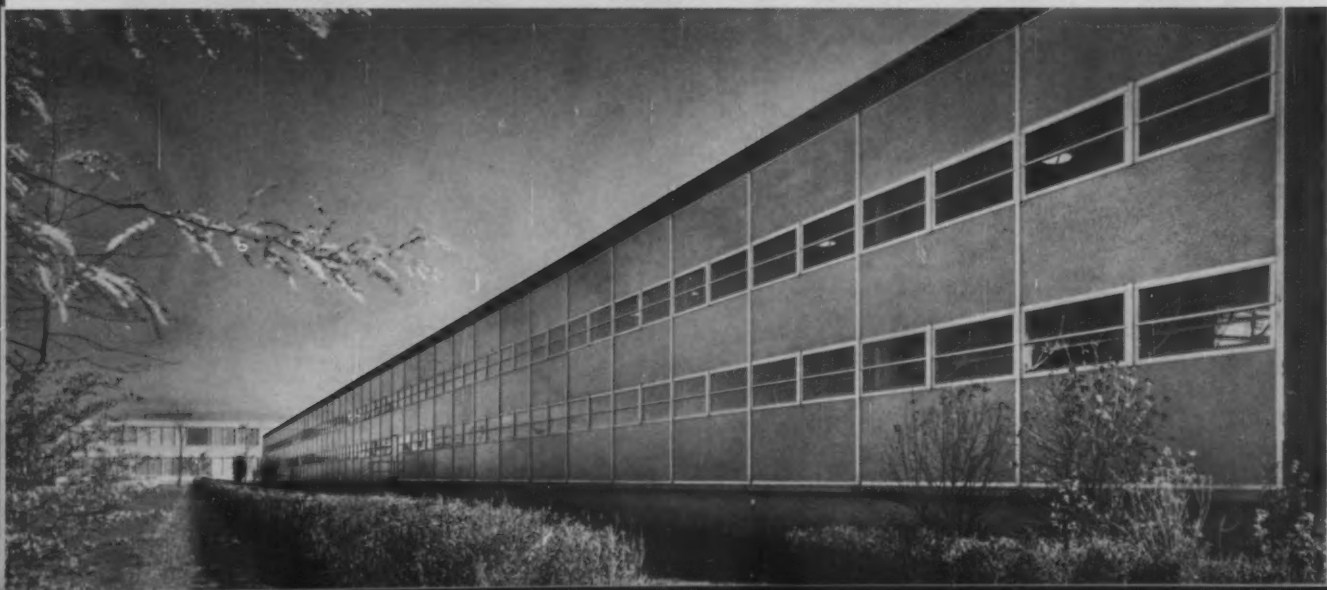




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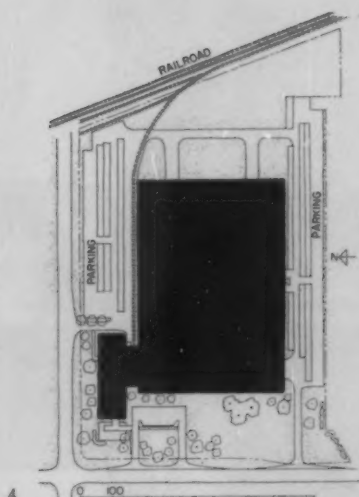


3

The office block (1) and (2) is entered through a garden court, patterned with grass, ground cover, and flowers, blooming in rotation with the seasons. This unit is sheathed—four sides—in light gray structural glass held in aluminum surrounds. The canopy is of structural steel, painted charcoal gray.

The manufacturing building (3) is faced with asbestos cement sandwiched panels finished with a terrazzo-like gray cement enamel. The panels are set in aluminum surrounds and sealed in place by neoprene gaskets.

The 20-acre plot (4) is bounded on two sides by highways and on the other two by a railroad and elementary school. Visitors' parking adjoins the office entrance; there are two areas for employee parking.



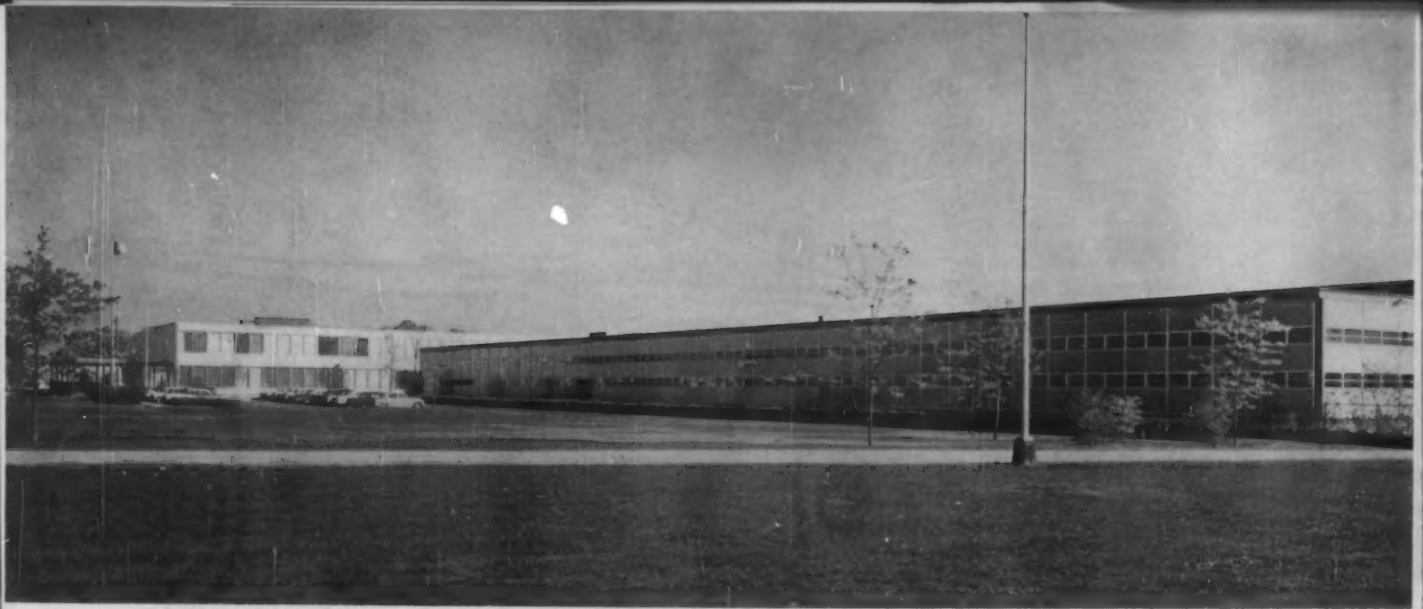
Near Chicago: A National Sales Center and Cosmetics Plant

*Avon Products, Inc.,
Morton Grove, Illinois
Skidmore, Owings & Merrill,
Architects and Engineers*

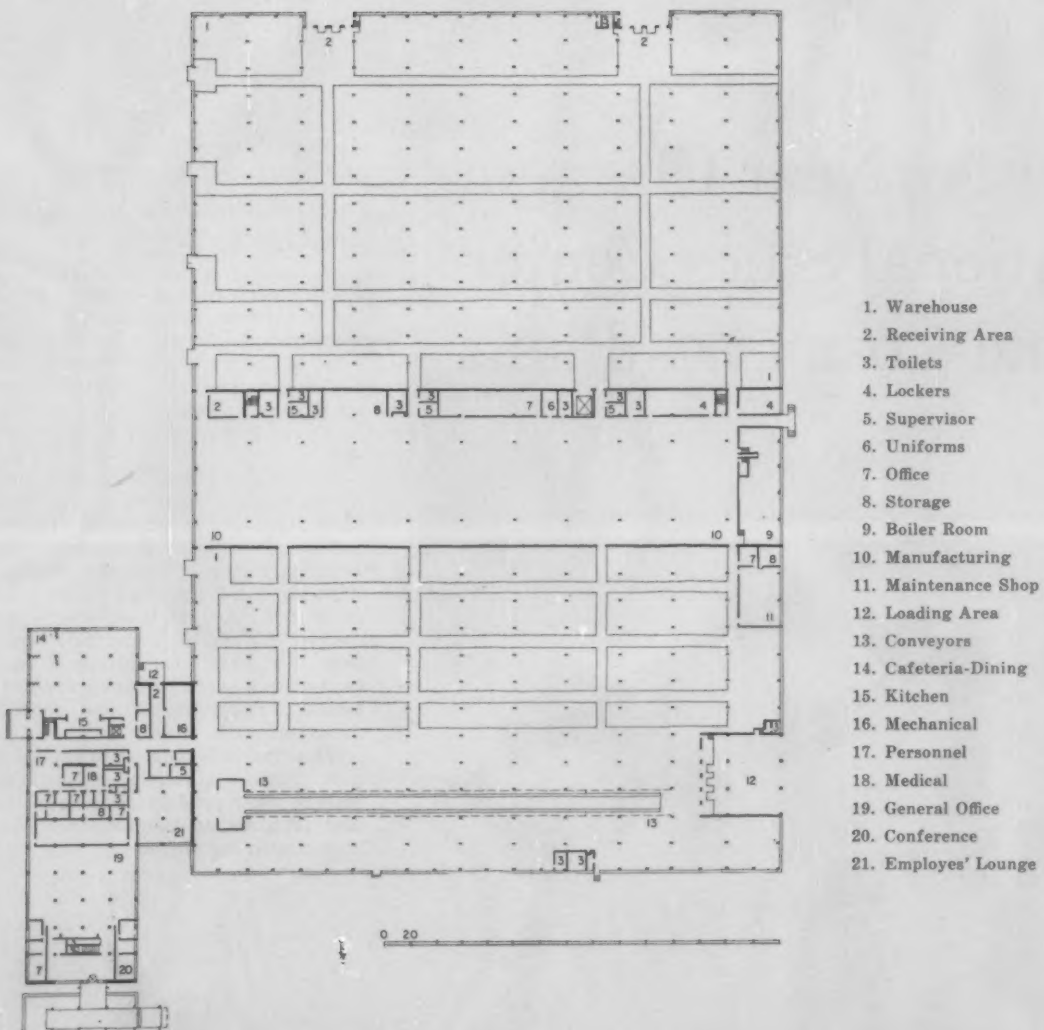
For this attractive midwestern plant, the architects provided what they describe as a "complete turn-key job"—an all embracing service that included architectural, structural, mechanical, electrical, process piping, landscaping and interior plans and details.

The owner's operation is an unusual one, consisting of a door-to-door sales organization composed of thousands of women throughout the country, plus a central manufacturing unit. Since members of the sales force are brought here—upon occasion—for meetings and indoctrination, the buildings, interiors, and landscaping were designed for both feminine approbation and smooth functioning.

The manufacturing-warehouse unit provides an effective flow from warehouse to production to shipping, and features an unobstructed open manufacturing floor area.



Hube Henry, Hedrich-Blessing





5



6



7



8



9

Avon Products, Inc.

In the production area, plan at left, trusses were utilized to provide large clear areas for manufacturing processes, in which cement finish floors are painted gray, machinery is painted white, walls are light gray glazed facing tile, and doors are painted in vivid accent colors. Plastic domes overhead furnish light and serve as smoke vents in case of fire. Special portions of the manufacturing building are air-conditioned.

The interiors of the office and meeting room unit (6) to (9) have received special attention. The lobby is finished in gray silk and walnut; conference rooms have charcoal gray or red carpeting, walls of gray or white silk, and teakwood furniture. Executive offices, gray carpeted and individually furnished, carry out a theme of aluminum frames with walnut or glass paneled walls. The architects were commissioned to select pictures for the executive suites.

The feminine-g geared manufacturing and administrative center for Avon Products, Inc. places dual emphasis on the efficient manufacture and handling of Avon's cosmetics and on the well-being of its employees—many of them women.

Air Conditioning

With the exception of a small island in the shipping space, warehouse shipping and receiving areas are heated to a serviceable 55 deg. by vertical projection-type unit heaters supplied with low pressure steam. Cooling is omitted. However, in the packaging area where women workers are engaged in filling packaging orders from storage bins on either side of a long narrow aisle, a "spot" air conditioning system was added to increase the temperature of the space to a more comfortable 72 deg.—and to provide for cooling during the summer months. This was accomplished, as shown below, by partitioning the aisle, dropping a ceiling over it, and installing a separate heating-cooling unit with an auxiliary compressor for the cooling cycle. Ducts were then run above the suspended ceiling, with 10 in. diffusers spotted at 15 ft intervals over the full length of the aisle.

The more conventional air conditioning system in the manufacturing and office areas uses multi-zone air handling units serviced by chilled water coils from a central refrigeration machine and cooling tower, and by low pressure steam from the

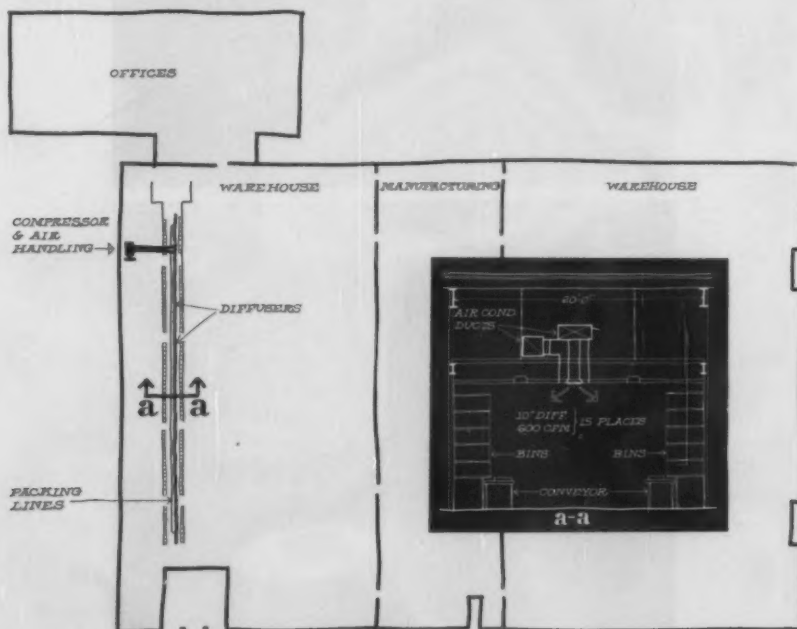
boiler plant. This central system, which is automatically controlled to maintain comfortable temperatures in occupied areas, is supplemented by forced hot water radiation around the periphery of the building and below large glass areas.

The steam generating units for the structure are three package type boilers. One of these supplies low pressure steam for the manufacturing and office areas; another generates high pressure steam for process work; and the third is arranged for dual pressure firing so that it can be used to deliver low pressure steam directly to the heating mains or to supplement the high pressure boiler should the demand for process steam exceed its capacity.

Structure

To provide a column-free area for production lines on the first floor, the record floor, mezzanine, equipment platforms and roof of the manufacturing section are supported by heavy 60 ft trusses whose design included an investigation of the secondary stresses produced by the oversized members and gusset plates. The low warehouse and shipping spaces on either side of the manufacturing area are roofed by a poured gypsum deck over semi-continuous girders and purlins. By cantilevering the girders over the columns and suspending hinged sections in alternate bays, substantial savings were achieved over conventional framing.

Avon Products, Inc.



West Coast: A Plant For Rebuilding Valves and Meters

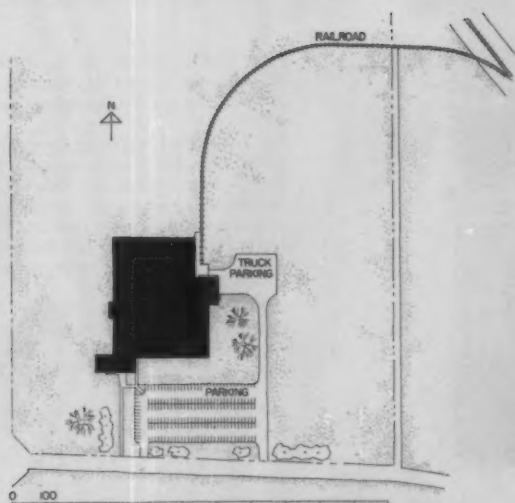
*Rockwell Manufacturing Co.,
Porterville, California
Walter Wagner & Partners,
Architects & Engineers*

*Will Thomas, Project Architect;
James A. Blayney, Mechanical &
Electrical Engineer; Edward Ave-
disian, Design Architect; William
Brooks, Structural Engineer; Burr
Garman, Landscape Architect*

This 106,000 sq ft plant for the re-
pair, rebuilding, and calibration of
meters and valves is located on a
33-acre site in a region which is



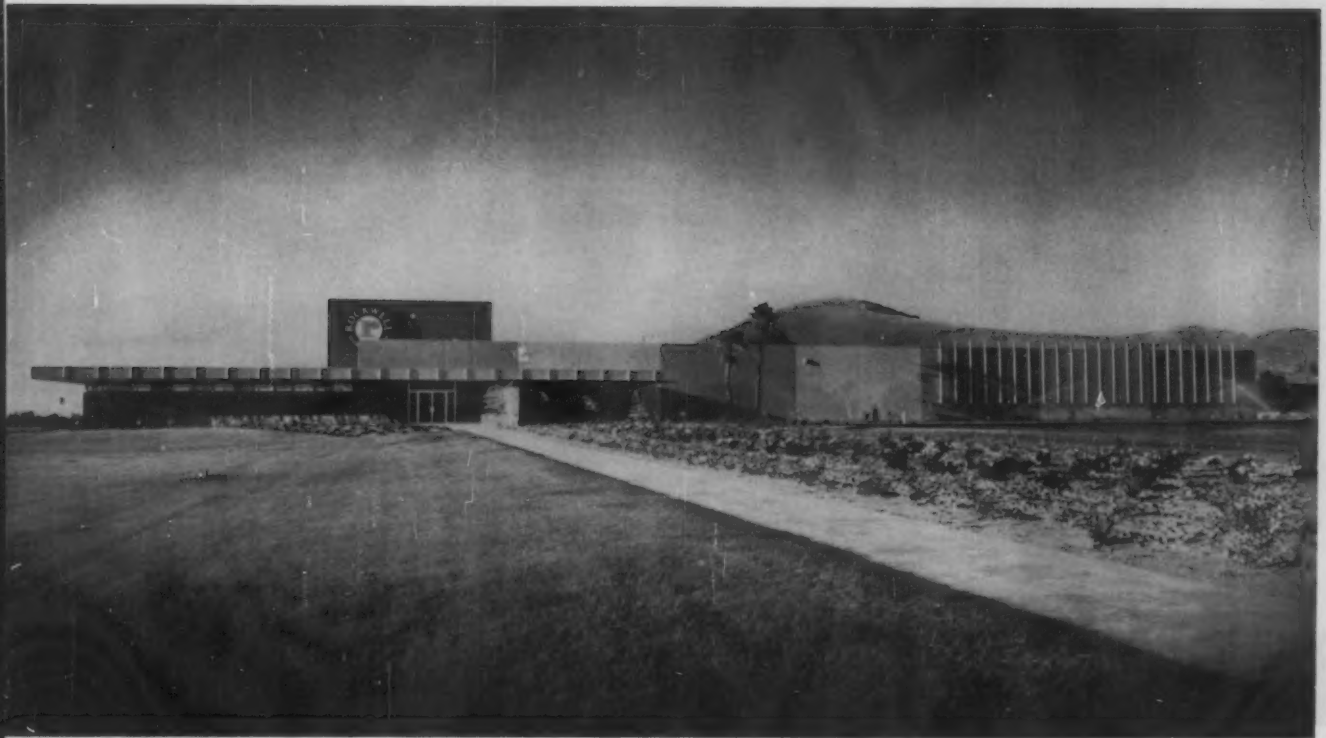
Julius Shulman



now rural, but developing rapidly. The exterior wall construction utilizes tilt-up 6-in. concrete panels, reinforced by $\frac{3}{8}$ in. rods running both ways at 7 in. o.c. The 20 ft wide by 22 ft high panels are painted both sides. Knockout panels are provided on the north and west sides for future expansion.

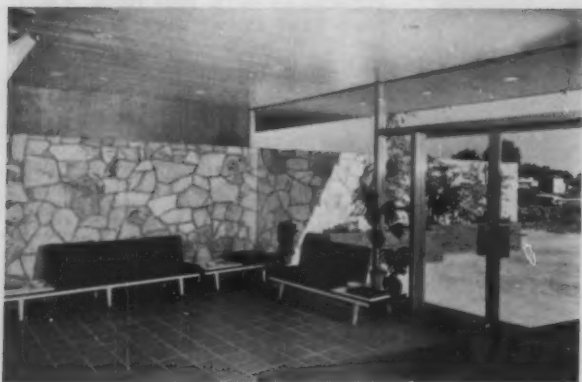
The decorative arrangement of the vertical exposed flues for the soldering iron furnaces—right, above—creates another exterior feature of considerable interest. These asbestos pipes—painted in a contrasting color—are necessary to plant operation in order to keep interior temperatures within close limits, since certain of the products function through temperature variations.

Rockwell Manufacturing Co.

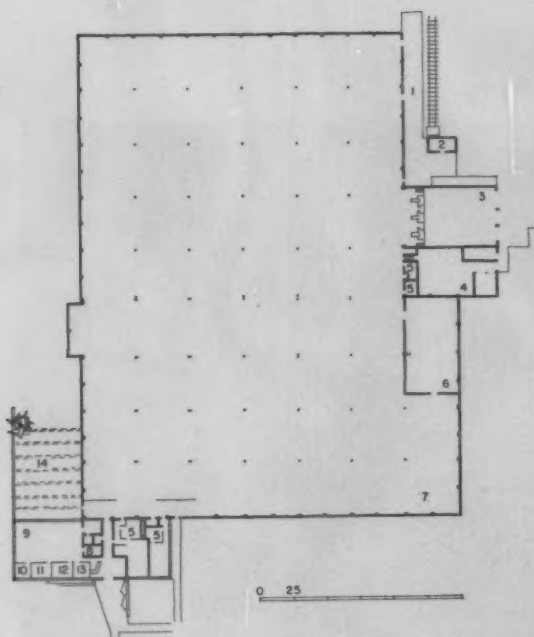


Julius Shulman

1



2



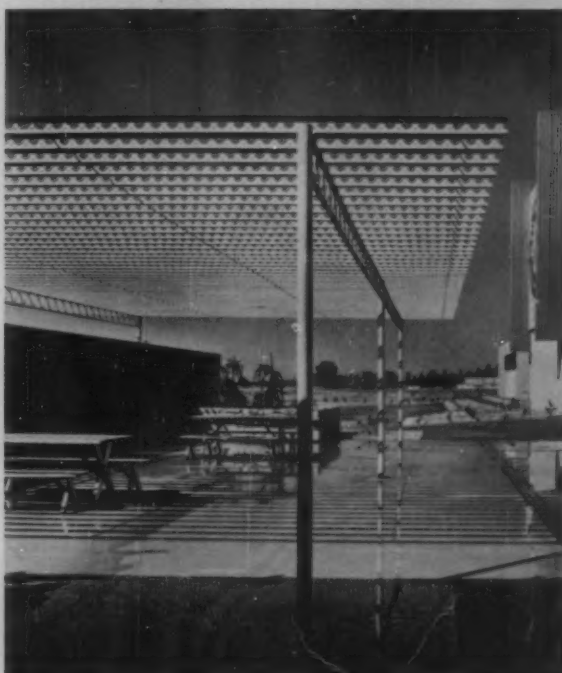
- | | |
|----------------------|-------------------|
| 1. Railroad Platform | 8. Vault |
| 2. Paint Storage | 9. General Office |
| 3. Truck Loading | 10. Office |
| 4. Boiler Room | 11. Conference |
| 5. Toilet | 12. Manager |
| 6. Cleaning Room | 13. Secretary |
| 7. Warehouse | 14. Patio |

(1) shows the south elevation, with office unit and entrance at left; the pattern of heat dispersing flues at the right.

In the visitors' reception lobby (8) the floor is of natural quarry tile, the ceiling of perforated aluminum pans, and the walls variously of Palos Verdas stone or walnut paneling. The suspended perforated ceiling in lobby and office areas serves as a diffuser for the plenum space above.

The paint storage room (3), located adjacent the outside truck dock, is enclosed by an interestingly patterned wall made by structural tile laid flat.

A metal pergola (4) provides sun protection and a decorative accent for the employees' patio, popular at lunch time.



Rockwell Manufacturing Co.



Platform near employee entrance takes advantage of lower required clearance, supports blower units (three for nearby warehouse zones, one for offices) and air intake ducts. Adjacent smaller platform holds office air conditioning equipment—boiler, compressor, condenser and chiller—and domestic hot water supply. Separation of office system permits use of administrative areas when main plant and central boiler room are shut down

By skillfully weaving them into the total design, the architect-engineers for the Rockwell plant have coaxed its structural and mechanical elements to serve as "architectural" elements as well: flues required to disperse heat from soldering iron furnaces transform one elevation into a pipe organ (over page); the office air conditioning system puts an acoustical ceiling to work as a diffuser; and low cost tilt-up walls form a paintable surface on which to splash the bold panels of color that enliven windowless elevations—and disguise construction joints.

Foundation and Structure

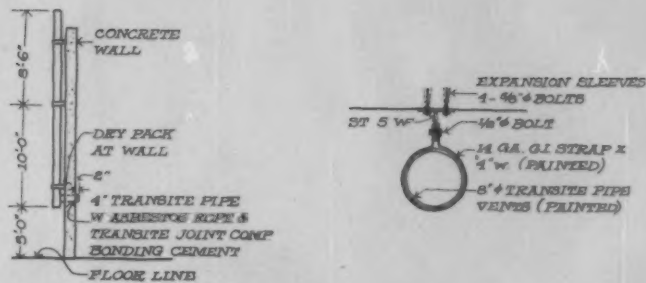
A special site problem of alluvial soil with a high content of fine sand—suitable neither for foundations nor for Rockwell's requirement of a floor free from settlement or cracks—was met by taking a cue from the highway engineer. The top four feet of soil were removed and recompacted with a light 2-ton high frequency vibrating roller of a type recently developed for highway work. True to road-building tradition, the 6 in. reinforced concrete floor slab was poured directly over the compacted earth fill, with special foundations provided only for large machine tools. It was then hardened with a heavy duty, absorption process floor to protect delicate meter parts from dusting of the concrete surface.

Except for the office portion of the building, all exterior walls are of tilt-up construction which eliminates 90 per cent of the forms required for poured in place concrete and results in a smooth, paintable surface inside and out. The ribbed steel deck roof, which is welded to steel bar joists supported at 4 ft intervals by flat steel trusses, also serves as a structural diaphragm to resist earthquake forces—thus eliminating the steel bracing rods usually required to meet the California building code. Its entire surface is covered with a built-up roof over fiber insulation. Except in the crane bay, columns are 6 in. diameter steel pipe spaced 40 ft apart both ways.

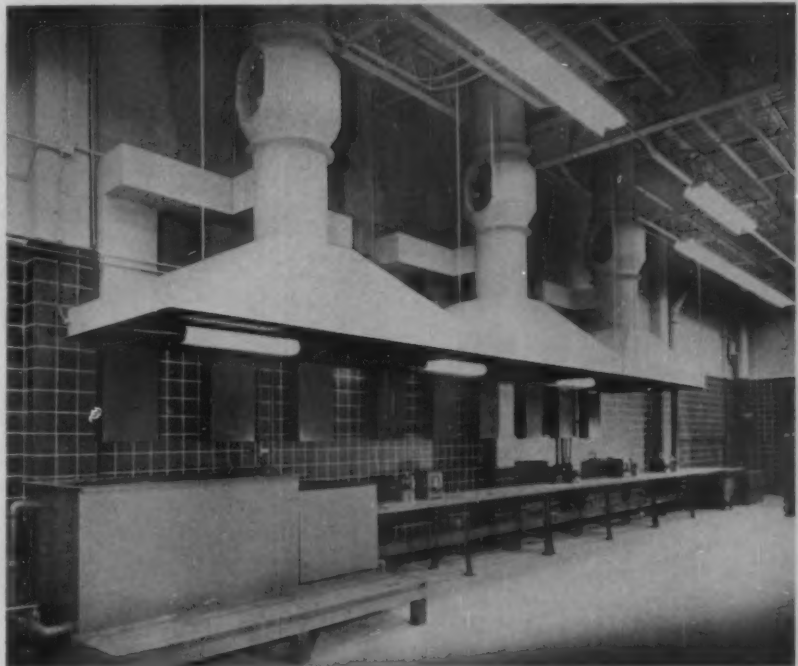
Heating and Air Conditioning

Because the entire building is air conditioned, no windows or skylights were required in the manufacturing area. This not only simplified construction, but also helped to reduce the air conditioning load, the amount of dust entering the plant—and maintenance expenses.

The shop and warehouse areas are air conditioned summer and winter by 23 fan coil air handling units suspended from the roof structure



Exposed flues on south wall (above) vent heat from soldering iron furnaces; in cleaning room, fan-equipped exhaust hoods (below) are used to free air of sand-blasting dust, acid vapor



Julius Shulman—also photo page 176

and zoned according to bays. For maximum flexibility in the use of interior space, each zone is served by a separate system consisting of the air handling unit, an integral duct system and individual temperature controls. Fresh air enters the units directly through the roof; hot or chilled water is piped to them from a central source. A steam boiler is the primary source of energy for heating and for the absorption unit which generates chilled water for cooling. Ducts are nested between the bar joists to maintain 15 ft clearance between the floor and the bottom of the trusses. The open steel trusses also permit the piping, electrical distribution system and lighting to be run both ways above the bottom chord of the trusses or bar joists.

In the administration areas, heat-

ing and cooling is provided by ceiling pans clipped to overhead radiant pipes through which hot water is pumped in the winter, chilled water in the summer. Heated or cooled air for ventilation is supplied to the area by a separate forced air unit, and diffused through the perforations in the metal pan acoustical ceiling, making it possible to relocate office partitions without changing the air distribution system. The acoustical control provided by the ceiling is supplemented by a thermal-acoustic blanket placed above the piping.

To reduce the load on the factory cooling system and draw the heat away from the operator, the transite flues for the soldering iron furnaces were bolted outside the south wall of the building, left exposed, and painted a contrasting color.

Factories



Rockwell Manufacturing Company

FLOOR SLAB

PROBLEMS IN FACTORIES AND WAREHOUSES

By J. L. STAUNTON, Consulting Engineer, New York City

Architectural Record survey shows that on-grade concrete slabs continue to give trouble due to poor design and construction practices

The problems and their relative importance are analyzed by the author

Too little attention has been paid to the design and construction of floor slabs at grade in factories and warehouses. This is obvious from the results of a survey conducted by ARCHITECTURAL RECORD among plant engineers which revealed that 61 per cent of the respondents had some sort of trouble with floor slabs in their buildings. A subsequent article will cover recommended practices to keep these troubles to a minimum.

Since most modern factories and warehouses are being designed as one-story structures for best circulation of both personnel and materials, the slab at grade should have become the most important part of the structure. Instead, with the possible single exception of airplane hangars, slab design frequently has been relegated to the rule of thumb design of using a 6 in. slab at grade with some nominal reinforcement. Where no importance is attached to design, it is likely also that little attention is given to construction or supervision. Such practice can only lead to trouble.

Sufficient information on how to construct on-grade floor slabs has been available for a long time: the construction is very similar to building a good road. For one thing, the kind of compaction given to road beds could serve as an object lesson for floor slab designers. The theory of floor slab design should be even less complicated than road design, since very little care need be exercised in connection with frost action and underdrainage (except in the case of basement slabs or slabs below grade). On the other hand, more care is necessary in the preparation of the soil due to the confined area of the slab and the presence of many utilities and structural foundations in the case of indus-

trial slab than is required for road construction.

It's strange that designers and builders of industrial buildings will take all the normal precautions on the rest of the construction—structural, mechanical and electrical—but neglect the floor slab which is the platform upon which the entire operation is performed.

Floor slab problems reported in this survey are about evenly divided between poor foundation conditions and poor concrete work. From the results of this questionnaire there is no way of knowing whether these conditions are due prevalently to design or construction deficiencies.

To summarize the results briefly, the use of the structure (manufacturing or warehousing), the type of operations, the type and weight of fork lift trucks—all seem to have no bearing upon whether there will be difficulties or no difficulties.

Apparently expansion joints are good things to use. Contraction joints do not seem to be as important as first thought. Especial care must be taken where the foundation conditions are found to be poor. It is relatively important to have pervious soil under the floor slab. The size of the structure does not seem to have too much pertinence. Apparently, present construction practices are better than they were in the past, and relatively less trouble is occurring in more recent structures.

Indications are that conservatism with respect to the thickness of the floor slab is well warranted, as is also the use of a better grade of concrete. The idea of compacting the fill prior to placing the floor is of primary importance, while the thickness of the fill under the floor is not of much consequence.

In evaluating this questionnaire, various extraneous answers were eliminated to arrive at the results. Thus, in various instances, responses such as "no answer," and incomplete answers were deleted prior to computing the percentages.

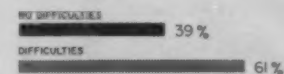
The questionnaire was in two parts—the first being general, and the second part semi-technical.

To evaluate the results of the questionnaire, answers to questions beyond No. 2, Part I were divided into two groups, each adding up to 100 per cent (except where noted). One group was comprised of all answers where difficulties were experienced; the other group had all answers where there were no difficulties. It was felt that this was the only way to get meaningful comparisons.

Following is the evaluation (solid bars indicate no difficulty; broken bars indicate difficulty):

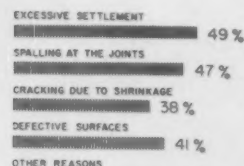
Part I

1. Have the on-grade floor slabs in your building caused you any difficulties?



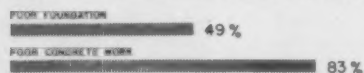
Approximately 2000 questionnaires were sent out and 390 replies were received. Of those returned, 237 experienced difficulties, while 153 had no troubles. Thus, the percentage of the plants experiencing difficulties will range between 61 per cent (based on all questionnaires returned) and 12 per cent (based on all questionnaires sent out). In either case it can be seen quite readily that not enough attention is given to these on-grade floors.

2. If yes was it due to: (a) Excessive settlement, (b) Spalling at the joints, (c) Cracking due to shrinkage, (d) Defective surfaces, (e) Other reasons?



In evaluating this question, the respondents that either did not answer, and those that answered as "other reasons" were eliminated. Following this, a tabulation was made under each defect and the sum in each column divided by the number that replied following deletions. A glance at the percentages reveals that a great number of structures had more than one trouble.

An attempt was made to divide the difficulties into two primary categories—those due to poor foundation conditions and those due to poor concrete work. On this basis all difficulties due to excessive settlement reveal a foundation deficiency while

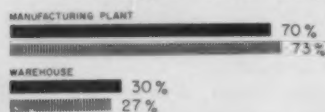


all those involving spalling, shrinkage, or defective surfaces should be attributable to poor concreting. It is our opinion that the 49 per cent due to foundation conditions should be fairly reliable, while the other percentage is felt to be on the high side for the following reasons:

a. If the concrete work were poor it is highly probable that more than one of the difficulties (spalling, cracking, etc.) listed would occur. Thus in the tabulation each respondent might have more than one answer indicating concrete quality was at fault.

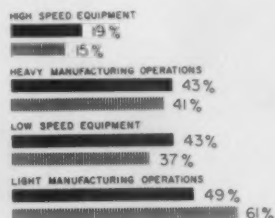
b. In cases where a poor foundation occurred, it is possible that this would also result in cracking, spalling, and defective surfaces.

3. Is the floor slab used primarily for manufacturing or warehousing?



There apparently is no greater tendency for manufacturing plants to give difficulties than warehousing and vice versa. Seventy per cent of the plants that had difficulties were manufacturing plants, while 73 per cent of the plants that had no difficulties were for manufacturing.

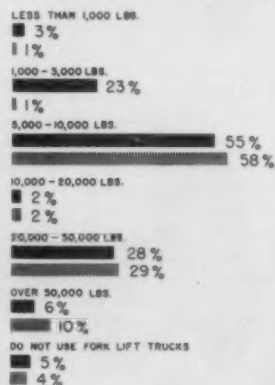
4. If manufacturing, which of the following categories does the operation consist of: (a) High speed equipment, (b) Heavy manufacturing operations, (c) Low speed equipment, (d) Light manufacturing operations?



From the results of this question it can be seen that the particular use of the manufacturing plant has no bearing on the tendency of the floors to be defective since the percentages of slabs causing trouble and not causing trouble are very close in each category, with the exception of the type of manufacturing plant engaged in light operations where apparently there is less trouble. This is what one would expect since these floors would not be as seriously loaded as others. However, enough reported things wrong so that caution should also be used in constructing slabs for these plants.

The percentages in each group add up to more than 100 because many of the answers listed the plants as being utilized for more than one purpose.

5. What is the capacity of the fork lift trucks commonly used: (a) Less than 1000 lb, (b) 1000-5000 lb, (c) 5000-10,000 lb, (d) 10,000-20,000 lb, (e) 20,000-50,000 lb, (f) Over 50,000 lb, (g) Do not use fork lift trucks?



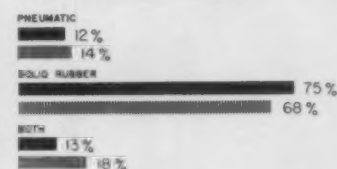
Here too there appears to be no apparent correlation between the weight of the fork lift trucks and the tendency to cause difficulties in floor slabs.

There is only one category (1000-5000 lb) where there appears to be

a preponderance of slab failures. For this difference to have been of any value it would have had to be part of a trend. Thus, either all those having a capacity of over 5000 pounds or all those having a capacity under 1000 pounds should also have a greater or lesser tendency toward causing difficulties. Since this does not occur and since all other percentages are close, it must be assumed that this result is a "sport" and should be disregarded. Probably no more is indicated than that this is one of the popular sizes of trucks.

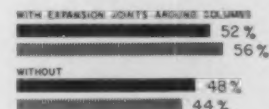
In these replies the percentages also add up to more than 100 per cent since many plants use a variety of fork lift trucks.

6. Do fork lift trucks have pneumatic tires or solid rubber tires?



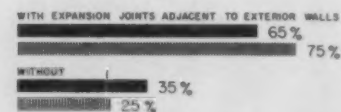
Here also there appears to be no correlation between the type of tires used on the fork lift trucks and the difficulties of the floor slabs. We see that 75 per cent of those buildings that had difficulties used rubber-tired trucks; also a very large percentage of those that had no difficulties (68 per cent) used solid-tired trucks. The only inference from this is that solid rubber tires are the most commonly used on fork lift trucks.

7. Are expansion joints placed around columns?



Here we see a very slight tendency of expansion joints around columns to help slab performance. Fifty-six per cent of those that had no difficulties utilize expansion joints around columns, while 52 per cent that had difficulties also had expansion joints around columns.

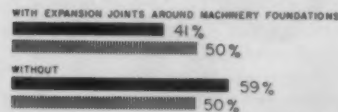
8. Are expansion joints placed adjacent to exterior walls?



Here again we see the case where expansion joints helped. Seventy-five

per cent that used expansion joints adjacent to exterior walls had no difficulties; while 65 per cent of those reporting difficulties indicate expansion joints adjacent to exterior walls.

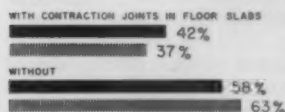
9. Are expansion joints placed around machinery foundations?



Expansion joints used this way also appear to be beneficial. Of the plants using expansion joints around machinery foundations, the percentage of those that did not have difficulties was 9 per cent higher than those reporting difficulties.

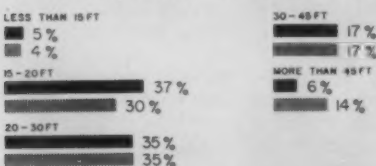
From the above three questions on expansion joints, it can be seen that, even though slabs with expansion joints are favored only slightly, incorporating them in these floor slabs is reasonably important.

10. Are contraction joints (dummy groove joints) provided in the floor slab?



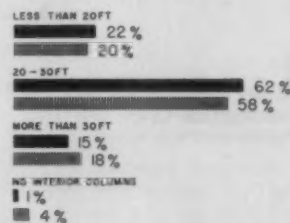
The inference that might be drawn from the figures here is that the use of contraction joints is relatively unimportant. The results would tend to indicate that the floor slabs without contraction joints give less trouble. In the first place, this seems contradictory to common sense: concrete shrinks as it cures, and in large areas such as slabs it will surely crack. Thus contraction joints are used so that cracking occurs in preferred locations. Also there is such a small difference between difficulties and no difficulties that no conclusion is possible.

11. If contraction joints are provided, what is their spacing: (a) Less than 15 ft, (b) 15-20 ft, (c) 20-30 ft, (d) 30-45 ft, (e) more than 45 ft?



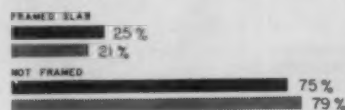
From the replies here, there is no correlation whatsoever between the spacing of the contraction joints on the floor slab and the question of having difficulties or no difficulties.

12. What is the column spacing: (a) Less than 20 ft, (b) 20 to 30 ft, (c) more than 30 ft, (d) no interior columns?



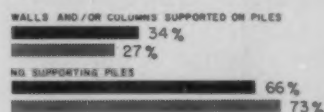
Here again there seems to be no correlation between the column spacing and the tendency to have difficulties or not. (Where column spacing is close, sometimes good compaction of soil is difficult to achieve.) The only conclusion is that most buildings have their columns spaced on 20 to 30 ft centers.

13. Is the floor slab structurally framed?



In this case the tendency towards difficulties or no difficulties doesn't have much connection with whether the floor slab is framed or not. However, it appears that framing of the floor slab has encountered, ever so slightly, a little more difficulty—4 per cent more. This can be attributed only to the fact that when it has been necessary to frame the floor slab, the soil must have been pretty poor, and there probably was some slight settlement in the foundations, causing cracking of the floor slab.

14. Are the walls and/or columns supported on piles?

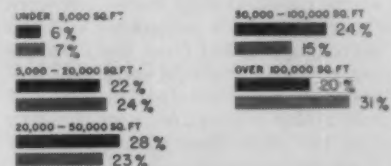


This is another case of special foundations where there was a slight increase in buildings encountering problems. This too is probably attributable to the fact that piles were necessary where there were poor foundation conditions.

No doubt the piles were used primarily under the walls, and if used for the floor slab, were not strong enough to take the entire load.

Answers to this and the previous question show that extra precaution should be taken where poor soil conditions exist.

15. What is the size of the factory or warehouse slab: (a) Under 5000 sq ft, (b) 5000-20,000 sq ft, (c) 20,000-50,000 sq ft, (d) 50,000-100,000 sq ft (e) Over 100,000 sq ft?



The results show that there are more difficulties in structures between 20,000 and 100,000 sq ft in area than in the very large warehouses and factories.

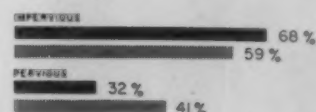
In the small factories and warehouses (up to 20,000 sq ft), the answers give no correlation. In the size between 20,000 and 100,000 sq ft, where difficulties are more prevalent, there may be a bit more slipshod construction. In the very large warehouses (those ranging over 100,000 sq ft) the size is so large that extra precautions probably are taken, perhaps using a highway type construction for the slab itself.

16. Is the floor slab placed on fill, undisturbed soil, backfilled material, do not know?



The answers to this question could not be clearly divided into the first three groupings listed. For example one person might consider a material fill, while another person might call it backfill. For this reason, these two groups were joined. The other category, undisturbed soil, was retained. The results do not indicate any difference between placing the floor slab on fill or backfilled material versus placing it on undisturbed soil.

17. Is the soil under the floor slab clay, sand, silt, gravel, rock, do not know?



The answers to this question also could not be grouped in the original categories. It was decided, therefore, to delete all those answers that came "do not know" and to divide the others into the classifications of impervious material or pervious ma-

terial. Under pervious material were grouped all those answers which included sand and gravel, while under impervious were put answers of clay, silt, and rock. The combinations where clay and sand were used were reported in both categories and the percentages taken from that. On the basis of this analysis, slabs over impervious material—that is clay, silt and rock—will cause more concern and difficulties than slabs over pervious material.

18. What is the address of the factory or warehouse?

This question was asked in order to have geologic information available in case it was found useful. Unfortunately it was impossible to make any use of the answers—trying to find out whether the factory might be constructed over a meadow mat or a peat bog or something of that nature. The character of the replies, in general, was not complete enough to make such investigations worthwhile.

19. When was the building constructed, prior to 1920, 1920 to 1930, 1930 to 1940, 1940 to 1946, 1946 to 1950, 1950 to 1955?

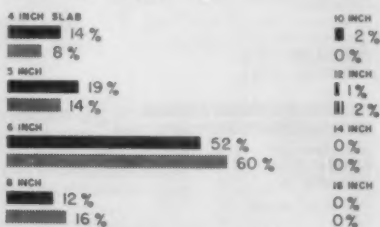


From the answers obtained here one could conclude that since 1940 our construction practices in regard to floor slabs have improved. It is interesting to note that the greater percentage of difficulties with respect to no difficulties occurred in the years prior to 1940. Then from 1940 up to the present, the tendency has been for fewer difficulties to be reported. Even so, 26 per cent of those having difficulties reported them in the period 1950 to 1955. This is unfortunate and shows that present construction practices still leave something to be desired.

Part II

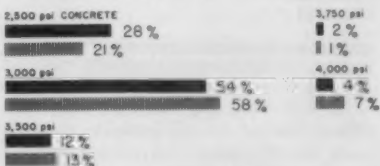
In this part of the questionnaire we attempted to find some correlation between the actual engineering design of floor slabs, and the tendency to cause difficulties. Unfortunately, in practice so many different design techniques are used that many questions turned out to have no value.

1. What is the thickness of the floor slab: 4 in., 5 in., 6 in., 8 in., 10 in., 12 in., 14 in., 16 in.?



The numbers reporting floor slabs over 10 in. were so small that no percentages could be assigned to 14 in. and 16 in. slabs. However, the deeper the floor slab the less tendency there is to have difficulties. When slabs were under 6 in. thick the number having difficulties was greater than those having no difficulties, and vice versa.

2. What strength of concrete was used in the construction of the floor slab: 2500 psi, 3000 psi, 3500 psi, 3750 psi, 4000 psi?



The answers here show that those floor slabs which had the better grade of concrete, 3000 psi or stronger, obviously stood up better. This could mean either that better concrete will prevent trouble, or that if better concrete is specified, more attention will be given to design and supervision.

Note: Questions 3 through 8 elicited either such a wide variety of answers or no answers at all that no meaningful analysis could be made.

3. What is the size and spacing of the reinforcing steel?

4. Where with respect to the depth of the slab was the reinforcement placed?

5. If expansion joints were used what was the size, material, and the spacing of these joints?

6. If intermediate contraction (dummy groove) joints were provided, were they made with a saw, and edging tool, or other means?

7. What was the width and depth of the contraction joint?

8. What precautions were taken at joints to minimize differential settlement: dowels, keys, slab thickening, other method, none, do not know?

9. Describe type and method of applying floor finish.

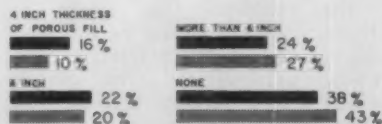
The variation in the answers to this question were so numerous that the quantitative values were useless. However, reading of the answers was sufficient to reveal that the use of a hardener alone is not enough to insure against having troubles with the floor surfaces.

10. Was subgrade below floor slab thoroughly compacted prior to placing concrete?



The description of compaction varied so much that there was no point in reporting in detail on this part of the question. However, 91 per cent of those not having difficulties compacted the subgrade as against only 83 per cent of those having difficulties. Therefore, it can be seen that compaction under the floor slab is important and will tend to minimize the tendency towards difficulties.

11. How much porous fill was placed under floor slab: 4 in., 6 in., give other thicknesses, none?



There is not much difference between the percentages of those having difficulties and those having no difficulties. There is a very slight tendency for slabs over either no fill or more than 6 in. of fill to give less trouble. It can be presumed that where fill is more than 6 in. greater care was taken; and in the cases where no fill was placed the soil generally was very sound and undisturbed and did not require any pervious fill.

12. What material was used for porous fill: gravel, coarse sand, cinders, crushed stone, other material?

Both the number of "no answers," and those giving various combinations were so numerous that no value could be obtained to whether gravel or sand, cinders, etc., were used in this porous fill.

The author acknowledges the assistance of Sydney Harris in tabulation of the questionnaires.

Giant Balloons Hoist Aluminum Stressed-Skin Dome

A unique factory glistening on the plains of Kansas marks the first industrial use of Kaiser Aluminum's stressed-skin dome—and the first use of balloons as scaffolding for a metal building.

The dome, which will provide 16,500 sq ft of manufacturing space for the Fi Fo Conveyor Company, is identical to the prototype dome built at Hawaiian Village last January (ARCHITECTURAL RECORD, March 1957, pp. 251-254). However the steel mast that hoisted the Hawaiian Village dome onto its foundation was replaced in this instance by two rubber-coated nylon balloons, one 95 ft in diameter, the other 50 ft in diameter.

To hold the panels which form the dome's crown, two 10 ft high "A" frames were set on the concrete foundation with a $\frac{5}{8}$ in. steel cable spanning some 50 ft between them. The pentagonal framework and sections which form the vent cover at the top of the dome were attached to a hook hung in the center of the

cable span, and the first five panels fastened around it. The balloons were then laid on the foundation, the smaller atop the larger, and anchored in place with chain ties. As additional panels were bolted together about the perimeter of the shell, the balloons were gradually inflated by a high-capacity blower, permitting work crews to fasten all the panels at ground level. Inflation was controlled so that the balloons' diameters remained constant while they expanded vertically to a height of almost five stories—taking the shell with them as they went. When all the panels had been attached, the dome was anchored to 25 concrete piers about its circumference, and the supporting balloons removed.

The shell was erected in 22 hours by a 38-man crew under the direction of the Fi Fo Construction Company, originators of the balloon erection method. The completed dome is 145 ft in diameter, 49½ ft high.

more roundup on page 196



Supporting balloons expand.



Shell is lifted gradually



Panels are bolted in place



Completed dome is anchored to base



Balloons, shown during a test, expand vertically to a height of 5 stories

Infrared to Heat Tomorrow's Factory

Industry's need for an economical method of heating such high-bay buildings as foundries, warehouses and aircraft hangars has increased markedly in recent years. Commonly-accepted space heating systems based on water, air, steam and electricity have become more expensive and less satisfactory as buildings grow in size and heating requirements grow more complex. Frequently, as at loading docks and other partially exposed areas, space heating is impossible.

Heating engineers recognize that conventional space heating systems operate indirectly, creating a blanket of air around a person to reduce body heat losses, rather than heating the person directly. In small, enclosed areas this is not a particular problem, but as floor space grows and roofs become higher, more and more Btu's are necessary to heat increased amounts of air for comfortable working conditions. Heating costs rise proportionately.

In its efforts to alleviate the high-bay heating problem, industry has tried a number of techniques, the most promising of which has been radiant heating. Because it heats surfaces and people directly rather than by convection from warm air, this type of system overcomes many of the shortcomings of space heating.

The two most common forms of radiant heating are panel heating and infrared heating from above. The former uses the floor or wall area as a radiator with the source of heat imbedded in it. This system has gained acceptance in homebuilding and similar applications, but cost considerations have caused drawbacks in industrial use. Installation cost is relatively high, owing to the tubing used to circulate heat through the floor or walls.

This cost factor is largely overcome in overhead gas infrared radiant heating because the source of heat is above the floor rather than inside it, eliminating the need for tubing. Heating technologists for several decades have attempted to capitalize on these advantages, but have been stymied in perfecting a simple, efficient gas infra-red generator. The chief problem lay in the fact that the generators' comparatively low operating temperatures did not produce infrared of sufficient intensity. These units utilize a standard gas burner to heat metal strips, tubes or louvers which emit infrared energy. This intermediate step in the

heat transfer process—similar to using a heat carrying fluid such as water or steam in conventional systems—further reduced the generators' efficiency.

A radically new approach to gas infrared generation by a German scientist, Guenther Schwank, has promised a solution to the problem. Generators based on his inventions were brought to the United States last year from Germany and are now being made here under license agreements. Their success in difficult and varied applications both here and abroad indicate that gas infrared radiant heating may well become the conventional method for heating the factory of the future.

The Schwank technique differs from previous gas infrared generators in that one stage in the earlier generation process is by-passed completely by using the structure which supports combustion as the infrared emitter. No metal strips or louvers are needed. Thus higher operating temperatures are feasible, and a maximum proportion of the Btu input is converted into usable infrared.

An operating temperature of 1650 deg. is achieved in the Schwank generator by combustion of gas on the surface of a patented ceramic mat. Each ceramic unit is perforated with 200 holes per square inch through which an air-gas mixture feeds. The large number of holes and the physical characteristics of the ceramic material make possible the relatively high surface temperature achieved. Because gas is converted into infrared energy in the wave lengths readily absorbed by most common materials, the generator is considered the most efficient and economical known today.

Conventional calculations for determining the amount of heat required for comfort heating of a building are not applicable to infrared. Its rays, like those of the sun, warm only the bodies which absorb them and not the air through which they travel. Once the energy waves emitted by the gas generator strike a person in their path or the floor, wall or machinery, they are transformed into heat.

The feeling of warmth created by infrared can be illustrated by stepping from the shade into sunlight on a cool day. The body is warmed instantly while the air remains cool. In an infrared heated building, a person is warmed by radiation from the generator and by radiation, con-



Closeup shows typical generator, with ignition, gas supply and control relay

duction and convection from the floor-wall-machinery surfaces which become radiators themselves. Workmen don't experience a sharp change in air temperature when they go outside or into unheated areas of the plant; tools and machinery are always warm to the touch. Additional advantages are absence of drafts, noise and odors.

Because infrared heat requirements are calculated in square feet instead of cubic feet, no single yardstick can be used to compare performance with conventional space heaters. Generally, gas-fired infrared can lower heating costs by 20 per cent in a building easily heated by other methods. In hard-to-heat buildings, heating costs can be reduced up to 50 per cent. In addition, infrared can provide spot heat in warehouses or other unheated buildings as well as at loading docks and other partially exposed areas. The infrared generators can be installed at any height as low as 7 feet and as high as 60 feet without sacrifice in efficiency. Sidewall mounting of infrared generators is also possible.

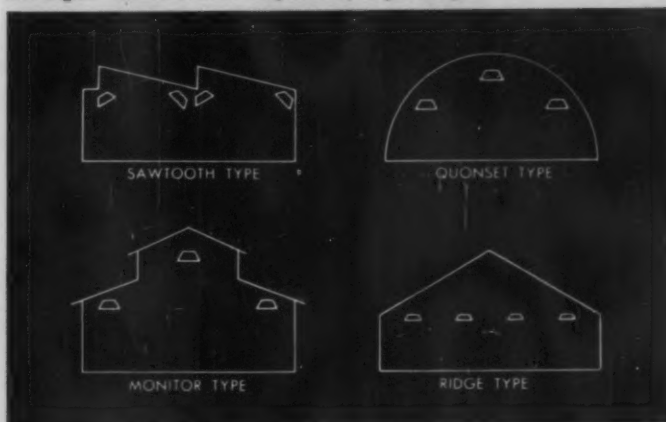
Operation of the new infrared generator on natural, manufactured or liquefied petroleum gas is extremely simple. Gas is metered through an orifice, passes through an air aspirating chamber and a mixing tube to a chamber under the ceramic mat where it is distributed uniformly through the ceramic. This is a 100 per cent primary air burner, requiring no pre-mix or blower.

U. S.-designed gas generators based on the Schwank principle are multiples of an eight-ceramic combination called a "rayhead." These rayheads are grouped in an aluminum reflector which helps direct infrared toward the surfaces to be heated. For installation in high-bay buildings, a large number of rayheads are combined in the same fixture to radiate over a large area.

Generator models for indoor use have been approved by Underwriters' Laboratories. The zone thermostats normally used for heating are hidden from the rays of the generators so that heat rising from the floor controls the temperature. Life expectancy under normal service conditions is unlimited, with adjustments and repairs seldom if ever necessary. *Perfection Industries, Division of Hupp Corporation, 7609 Platt Ave., Cleveland 4, Ohio*
more products on page 208



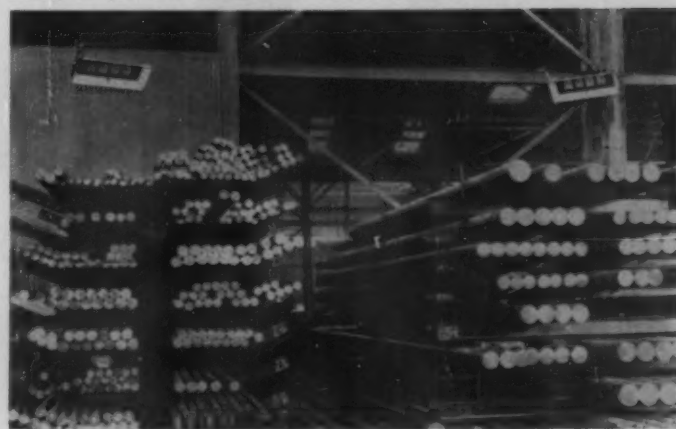
Infrared generators—sans ducts, blowers and heat exchangers—maintain even temperature, dispel damp



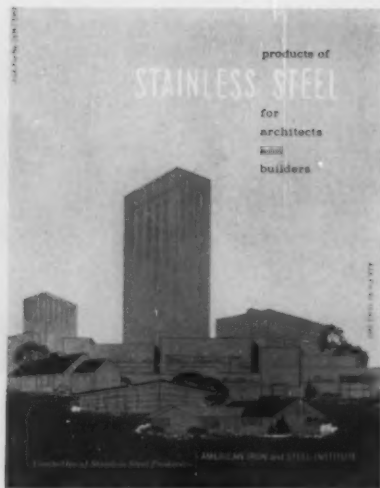
Generators adapt to all types of building construction, may be wall mounted when structure so dictates



Infrared heating in this space averaged monthly fuel saving of \$36 over similar unit heated structure



Angle-mounted generators check condensation on steel stocks; keep temperature minimum 10 F above dew point



Products of Stainless Steel for Architects and Builders describes a wide variety of factory-made stainless steel components, for such architectural and construction products as store fronts, windows and doors, hardware, exterior walls, escalator parts, swimming pool appointments, signs, trim, residential kitchen equipment, commercial and industrial feeding installations, and many others. The 44-page reference manual is lavishly illustrated with photographs, detail drawings, profiles and exploded views showing the product in use; and includes a three and one half page listing of stainless steel component manufacturers, listed by component type. The Committee of Stainless Steel Producers, American Iron and Steel Institute, 150 East 42nd St., New York 17, N. Y.

Geyser Curtain Walls (A.I.A. 17-A)

Twenty page technical manual contains detailed drawings, photographs, specifications and design recommendations for the Geyser Grid System for curtain walls and windows. Illustrations and descriptions of typical installations, and standard application details are also included. *E. K. Geyser Co., 915 Mc-Ardle Roadway, Pittsburgh 3, Pa.**

Swimming Pool Filters

Bulletin 626 presents typical installations, cross-section and operational drawings, size selection charts and other pertinent information on swimming pool filters designed exclusively for public, commercial and institutional pools. 24 pp. *R. P. Adams Company, Inc., 476 East Park Dr., Buffalo 17, N. Y.*

Redwood Grades

Describes and defines the seven major grades of redwood and illustrates each in available dimensions. 8 pp. *Georgia-Pacific Corp., Dept. 13-A, The Equitable Bldg., Portland, Oregon.**

Raynor Overhead Type Doors

(A.I.A. 16-D) Presents selection data, specifications and details of overhead doors for industrial, commercial and residential installations. 28 pp. *Raynor Mfg. Co., Dixon, Ill.**

Ideas In Stone

File folder includes data sheets on preparing, detailing and setting stone; illustrations of typical wall, fireplace, chimney and flagstone patterns; full color reproductions of the various tones available; and detailed information on standard shapes and sizes in natural quarried sandstone. *Briar Hill Stone Co., Glenmont, Ohio*

Tile-Tex Floor Tile (A.I.A. 23-G)

All-Products Catalog contains color charts and descriptions of Tile-Tex's asphalt, vinyl-asbestos, greaseproof and rubber floor tile lines, with added information on adhesives and maintenance materials. 12 pp. *Tile-Tex Div., The Flintkote Co., 1232 McKinley Ave., Chicago Heights, Ill.**

Inductor Air Conditioners

Bulletin 8827 outlines features and characteristics of Inductor air condi-

tioners for perimeter air conditioning of multi-storied buildings. A special section covers unit selection; and installation data and specifications are also included. 16 pp. *American Blower Div., American-Standard, Detroit 32, Mich.**

Glued Laminated Douglas Fir

Two-volume *Standard Specifications for Structural Glued Laminated Douglas Fir Lumber* presents latest developments in design and fabrication of structural glued laminated lumber. The first booklet, *DESIGN*, includes engineering design data, information on standard sizes and appearance grades, and specifications. The second, *FABRICATION*, contains requirements for lumber grades, fabrication, and protection of glued laminated members. *West Coast Lumbermen's Association, 1410 S. W. Morrison St., Portland 5, Oregon.**

Architects Manual

... for Venetian Blinds (A.I.A. 35-P-3) covers all types of venetian blinds, including skylight, motorized and audio-visual; and details both conventional and special installations. Supplementary material includes specifications, tabulated areas of weights and pulls, other technical data. 29 pp. *Levoler Lorentzen, Inc. 720 Monroe St., Hoboken, N. J.**

The Architectural Index

Annual index to articles appearing in seven major U. S. architectural publications quickly locates latest information on materials, methods, designs and the profession. Articles on buildings are cross-indexed under building type, architect or designer, and location. Technical articles are listed by subject. Published yearly in February, \$5. *The Architectural Index, Rm. 1000, 517 Bridgeway, San-Salito, Calif.*

Urethane Foam Resin

Technical bulletin cites property data and manufacturing limits for *Dulux* foam resin R-42, a polyester resin which can be foamed in place to make rigid urethane foam for heat insulation and sound proofing. *Room 7021-D, Du Pont Company, Wilmington 98, Del.**

**Additional information in Sweet's Architectural File, 1958*

more literature on page 228




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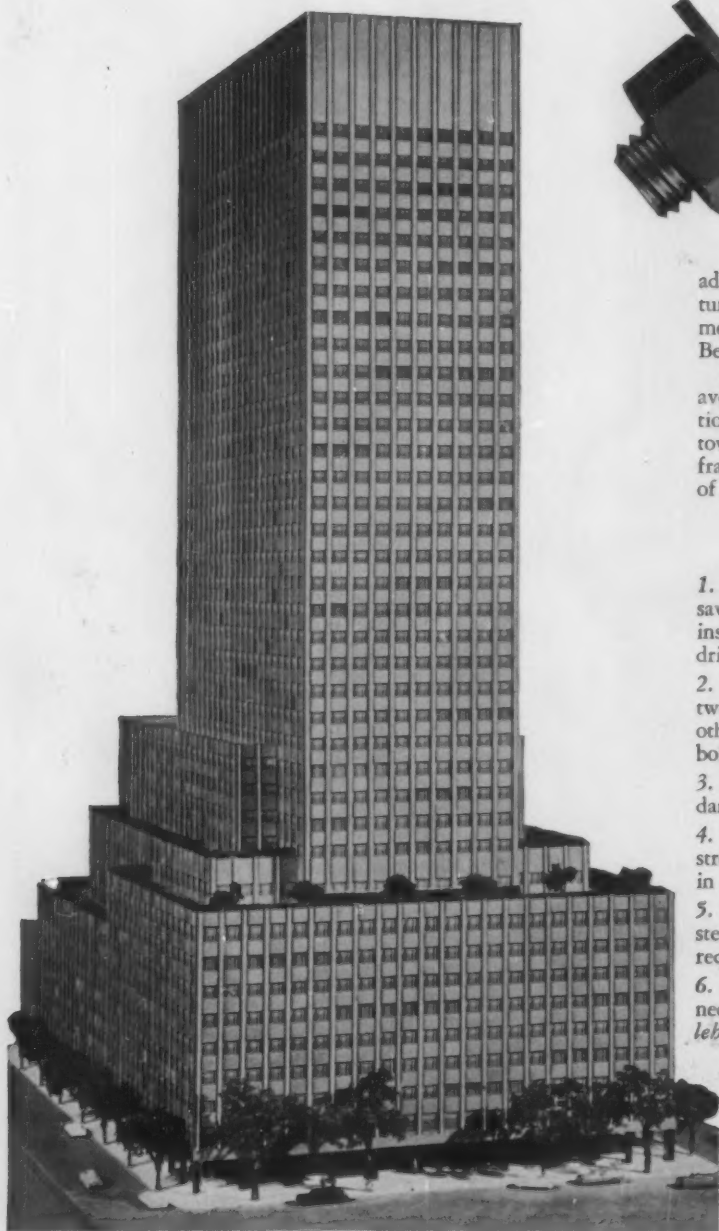


Building—U. S. Fidelity &
Guarantee Co., Richmond, Va.
Architect—Henley Walker, Jr.
Contractor—Daniel Construction Co.
Type—Adlake Curtain
Wall Windows

The Adams & Westlake Company

NEW YORK ELKHART INDIANA CHICAGO

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666 Fifth Avenue occupies the west side of the avenue between 52nd and 53rd Sts. This air-conditioned structure has a 14-story base and a 24-story tower. White porcelain mullions, set in narrow frames of polished aluminum, extend the full height of the building exterior.

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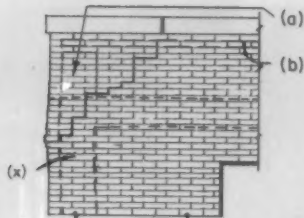
Owner and builder: Tishman Realty & Construction Co., Inc.; Architect: Carson & Lundin; Structural engineer: Victor Mayer; Fabricator and erector: Bethlehem Steel Company.

BETHLEHEM STEEL



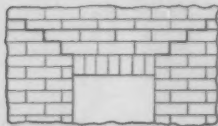
CRACKING OF MASONRY WALLS: 1

By ELWYN E. SEELYE, Seelye, Stevenson, Value and Knecht, Consulting Engineers, New York City



CAUSE: Parapet corner crack resulting from temperature expansion and contraction of parapet in relation to slab and walls below. (x) Elastic distortion of columns and spandrel beams.

PREVENTION: (a) Raise corner column stubs above roof; (b) Install horizontal reinforcing rods in joints of brickwork or (c) Omit a masonry parapet wall.



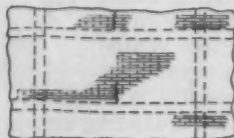
CAUSE: Lacks lintel or rowlock arch supports.

PREVENTION: Provide lintel or rowlock arch. (Flat masonry arches should not exceed 5 ft without lintel.)



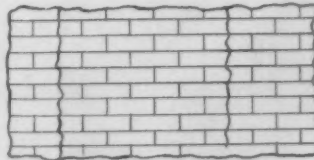
CAUSE: Deflection of a shallow lintel due to load, transfers stress to inelastic masonry over opening.

PREVENTION: (a) Use stiffer lintel; (b) Predeflect lintel by loading material on it prior to building wall above; (c) Mastic joints in vicinity of bearing.



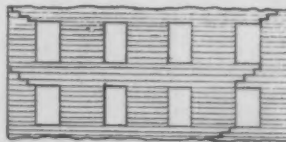
CAUSE: Deflection of spandrel beams carrying exterior masonry wall. Deflection of interior beams carrying masonry partition.

PREVENTION: (a) Use stiffer beams; (b) Prestress by loading material on beam prior to building wall.



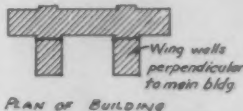
CAUSE: Random vertical cracks in face brick.

PREVENTION: (a) Do not permit use of mortar set accelerators; (b) Perforated face brick may be cause of this weakness.



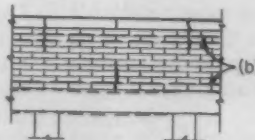
CAUSE: Cracks at wall openings a result of relief at weakest section, of longitudinal stress from shrinkage, or settlement.

PREVENTION: (a) For shrinkage control see (below); (b) Design adequate foundations.



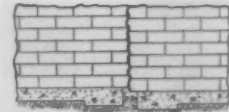
CAUSE: Shrinkage in cinder block back-up increases tendency of masonry keyed to it to crack, (see above example) and causes tendency of perpendicular wings to crack off. In block walls having no face brick, there is an increased tendency for the walls to crack from shrinkage.

PREVENTION: (a) Thorough curing of blocks (blocks should be at least 3 weeks old) and steam curing of blocks; (b) More expansion joints; (c) Specify lean mortar and avoid using mortar set accelerators; (d) Reinforce walls with horizontal rods placed in joints, at zones of weakness.



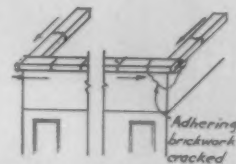
CAUSE: Parapet wall cracks at points of maximum positive and negative moment due to flexibility of spandrel beams; plus temperature expansion and contraction of parapet wall.

PREVENTION: (a) Use stiffer spandrels or predeflect them; (b) Install horizontal reinforcing rods in joints of brickwork.



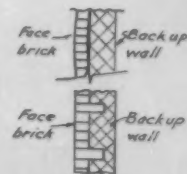
CAUSE: Cracks due to settlement of new building in relation to old.

PREVENTION: (a) Joint separating wall of new building from old; (b) Reduce the design unit load on the footings of the new building adjoining the old.



CAUSE: Shoved coping stones result from temperature expansion and contraction acting on parapet. Long coping stones, with thin non-compressible joints do not allow elastic adjustments.

PREVENTION: Use a watertight, elastic joint material. For example, pack occasional joint with oakum covered with caulking compound.



CAUSE: Bulging face brick resulting from inadequate headers or broken headers plus frost.

PREVENTION: Provide the standard amount of headers and/or galvanized anchors and keys.



CAUSE: Very dangerous situation. The thrust may be due to thermal expansion of contents in buildings; to foundation settlement, or to buckling from heavy loads without adequate ties being furnished by floor system.

PREVENTION: (a) Use wall anchors and straps to connect floor system with walls; (b) Use tie rods for granular storage or cold storage; provide adequate foundations.

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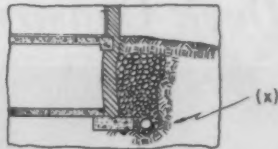
***Patent Pending

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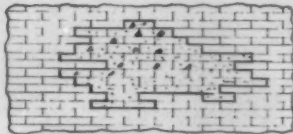
CRACKING OF MASONRY WALLS: 2

By ELWYN E. SEELYE, Seelye, Stevenson, Value and Knecht, Consulting Engineers, New York City



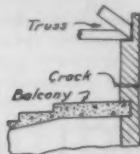
CAUSE: Very dangerous bulging basement wall resulting from inadequate section to act as retaining wall. Lack of drainage of base of wall causes build-up of hydrostatic pressure.

PREVENTION: Use adequate thickness to resist earth and frost thrusts (x). Provide for draining when ground does not drain away from wall naturally.



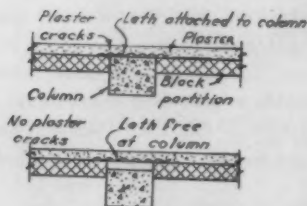
CAUSE: Surface shelled off because of under burned (salmon) brick.

PREVENTION: Specify that brick is to conform to an A.S.T.M. designation and send sample to lab. for civil testing. (Refer to Data Book for Engineers Vol. II) Elwyn E. Seelye, John Wiley And Sons, Inc., New York, 1951.



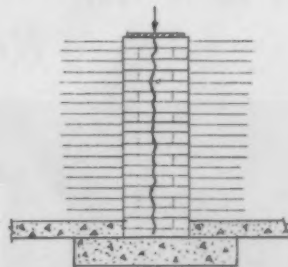
CAUSE: Top of wall overturned from roof truss expansion.

PREVENTION: Adequate structural design.



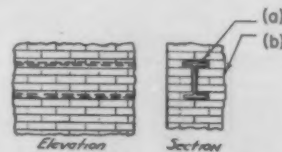
CAUSE: Short Lap. Not enough length of stretch for lath over each joint between column and masonry.

PREVENTION: Leave lath unattached to column and extend at least 8 in. beyond column and staple to partition.



CAUSE: Danger signal of overloaded masonry pilaster or pier is appearance of vertical cracks. Also an indication of corroding of imbedded steel column.

PREVENTION: (a) Provide adequate section to reduce unit stress to within safe limits; (b) Parge column with cement or paint with bitumastic paint.



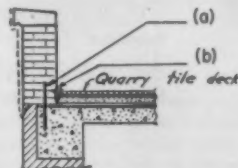
CAUSE: Rusting and resulting expansion of wall steel and lintels embedded in exterior masonry.

PREVENTION: Specify parging with 1/2 in. cement mortar, all steel embedded in exterior masonry.



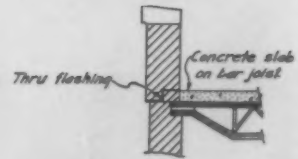
CAUSE: Disintegration of interior surface of parapet wall.

PREVENTION: (a) Use face brick on interior surfaces; (b) Do not waterproof inside surface with bitumen, so that surface is permitted to breathe.



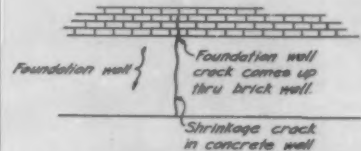
CAUSE: Parapet wall shoved on account of the expansion of deck.

PREVENTION: (a) Dowels between wall and spandrel beam; (b) Expansion joint.



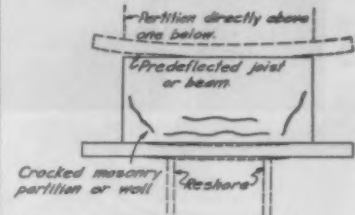
CAUSE: Expansion of concrete slab on bar joists thru flashing.

PREVENTION: (a) Provide lugs on top of joist; (b) Provide dowels; (c) Raise column stubs up into parapet.



CAUSE: Shrinkage in concrete.

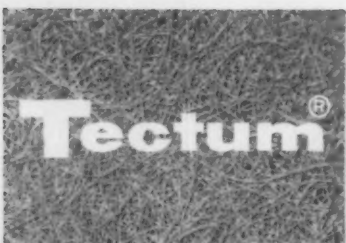
PREVENTION: (a) Provide adequate belt steel reinforcement; (b) Pour concrete wall in short alternate sections to take up initial set.



CAUSE: (a) Deflection of supporting double joist or shallow steel beam; (b) Leaving in reshores while building partition.

PREVENTION: Predeflect supporting beam by loading with partition material equal to the weight of partition before building same. Do not leave in reshores when partition is built. Where similar condition occurs above, predeflect supporting beam or joist before building partition up to same, or do not build partition up tight to beam or joist until deflection of beam or joist has taken place.

Note: Variations of this would be constructing offset exterior walls on flexible beams.



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CRACKING OF MASONRY WALLS: 3

By ELWYN E. SEELYE, Seelye, Stevenson, Value and Knecht, Consulting Engineers, New York City

For the prevention of cracks in masonry walls, it is recommended that the following requirements, where applicable, be added to standard masonry specifications.

WORKMANSHIP

1. Predeflection of Shallow Beams, Spandrels or Slabs Carrying Walls or Partitions:

Where called for on the structural plans, the material for partitions or walls shall be assembled adjacent to the structural member in order to predeflect same before the partition or wall is built.

2. Elastic Joints in Stone Masonry at Bearing Adjacent to Long Shallow Lintels and at Points of Maximum Positive and Negative Moments of Spandrel Beams:

Add a clause to standard stone masonry specification to provide for plastic mortar joints in these areas.

3. Under Cold Weather Protection add:

Accelerating or anti-freeze admixtures will not be permitted.

4. Reinforcing Steel:

Where called for on the structural plans, reinforcing rods and dowels shall be laid in the joints of the masonry work. The requirements for reinforcing steel as set forth in the "Structural Concrete" section of the specification, shall apply equally to this section.

5. Expansion Joints:

Expansion joints shall be provided in the masonry work where shown and in accordance with the details on the plans.

Note—Suggestions for locations and types of expansion joints:

(a) Provide expansion joint where the walls of a perpendicular wing join the main building, and where large units of a connected group of buildings join each other. How elaborate the joint should be will depend on whether the building is a monumental, utility or temporary structure.

(b) Provide expansion joint where the walls of a new addition connect to an old building. This can be a two-strip copper water-stop, allowing for vertical movement, or a mastic joint, depending on the probable life of the old building.

(c) Provide expansion joint where large area-way walls, retaining walls, and similar masonry structures abut and are perpendicular to the building wall. A mastic joint will usually suffice.

(d) Coping stones should be provided with a joint every 20 or 30 ft to be made $\frac{1}{2}$ in. wide and caulked with oakum and covered with caulking compound.

(e) Provide expansion joints in quarry tile roofs and exterior quarry tile decks.

Joints of premolded asphalt, cork or metal should be called for about every 20 ft in both directions and at the junction of the deck with the parapet walls and other vertical surfaces.

6. Headers and/or Anchors:

(See Data Book for Civil Engineers—Volume 11, Specifications & Costs, Elwyn E. Seelye, John Wiley and Sons, Inc., New York 1951)

7. Parging of Embedded Structural Steel:

Steel members, embedded in exterior masonry, shall be "battered" with not less than $\frac{1}{2}$ inch of setting mortar on all surfaces that are not indicated to be fire-proofed with concrete.

MATERIAL

1. Face Brick:

Face brick shall conform to the Standard Specification of the A.S.T.M. C 216, latest edition.

Note—The type of face brick selected should be one with a reasonably porous surface in order to obtain good bond with the mortar. For common brick and sand lime brick specifications, refer Page 3-09, Data Book for Civil Engineers—Volume 11.

2. Mortar for Concrete Block Back-up Walls:

Specify concrete block back-up walls to be laid in lime-cement mortar, not Portland cement mortar. The lime cement mortar should be weak to permit wall to take up volumetric changes locally rather than in large cracks. A mortar such as 1 part cement, 1 part putty and 12 parts sand by volume is suggested.

GENERAL DESIGN NOTES

The following notes on general design are offered to assist in preventing cracks in masonry:

1. Lintels:

Provide lintels for flat masonry arches exceeding 5 feet in clear span.

2. Footings:

When designing the footings for an addition to an existing building, it is good practice to reduce the relative settlement by using smaller unit loadings on the design of the new footings than were used on the old.

3. Parapet Walls:

When a masonry parapet wall is to be used, design the corner columns and exterior columns to extend above the roof level one or two feet to prevent shoving of the parapet corners and the cracking of the parapet wall. As an extra precaution also provide $\frac{1}{4}$ in. rods in every other horizontal brick joint from the line

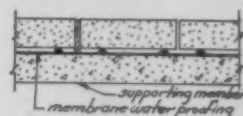
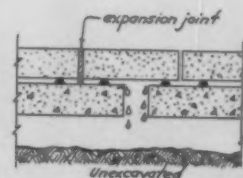
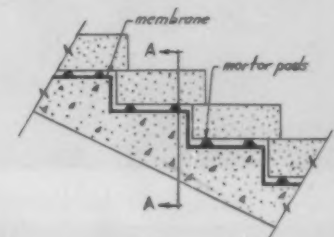
of the top floor window heads to the top of the parapet wall. These rods should extend back from corners 20 ft on each side. Rods should also be inserted in the parapet wall at locations where they will take the tension in the masonry over the points of maximum positive and negative moment in the supporting spandrel beam. Where there is possibility of thrust from expansion of a roof covering, such as quarry tile, provide vertical dowels between parapet wall and spandrel beam.

4. Exterior Concrete Block Walls:

In exterior concrete block walls having no face brick, the decided tendency for the walls to crack from shrinkage at the zones of weakness should be counteracted by placing $\frac{1}{4}$ in. rods in the horizontal joints at the corners of the building from ground level to top of parapet, and extending back 20 ft on each side. Also, continuous rods should be placed around the perimeter of the building at the level of the window heads and sills.

5. Ashlar Steps:

Lay ashlar steps on mortar pads $\frac{1}{4}$ in. clear of concrete supporting member. Provide plastic or premolded expansion joints at intervals of not more than 20 ft in each direction. The water that will come through can be drained off into the subgrade if the space below is unexcavated. Where space under steps is occupied, a membrane waterproofing must be provided.



CONNECTICUT GENERAL



Connecticut General Life Insurance Company,
Bloomfield, Conn.
architects: Skidmore, Owings and Merrill, N.Y.C.
consultant on interiors: Florence Knoll
Knoll Associates, Inc., N.Y.C.
general contractors: Turner Construction
Company, N.Y.C.

LINOTILE PRE-TESTED IN MOCK-UP



In this detailed, full-scale mock-up built by the general contractor, structural materials were subjected to painstaking examination for long periods. Of the many resilient floors tested here, Armstrong Linotile proved itself by every measure of appearance and function. Especially impressive was the evidence that Linotile's beauty is actually heightened by use and maintenance. Despite the fact that Linotile increased flooring costs 4% over other materials considered, the test data convinced Connecticut General officials that the extra cost was a sound investment.



LIFE INSURANCE COMPANY

flooring spec: Armstrong Linotile

LASTING BEAUTY

The recently completed headquarters of the Connecticut General Life Insurance Company have been cited by the AIA as one of the "Ten Buildings in America's Future." The Armstrong Cork Company is proud that Armstrong Linotile—a floor which has been tested in use for many years—was chosen for virtually all the important areas of this most modern building. A single coloring, No. 169 Graphite Gray, is used throughout. Its subtle graining makes a perfect background for the modern architectural features. And because Linotile is regarded as one of the most durable and serviceable of all resilient floors, it will retain its beauty for many years to come.



Armstrong Linotile—an exclusive Armstrong floor—has an enviable record of more than 40 years for ease of maintenance, exceptional durability, and decorative versatility. Linotile should not be confused with linoleum cut into blocks. A full $\frac{1}{8}$ " thick, the wearing surface extends through the entire thickness of the tile; it has no felt or burlap backing. Linotile is capable of withstanding furniture loads up to 200 lbs. per sq. in. without showing permanent indentation. It comes in two stylings—an unusually bold marbleizing and a subtle tone-on-tone effect; in many colors and sizes; and may be installed on all types of suspended subfloors.

EASE OF MAINTENANCE

Even in busy work areas, maintenance is always fast and economical because Linotile is specially processed for easy care under severe traffic conditions. Because Linotile is very dense, it has remarkable resistance to abrasion, indentation, and staining. Heavy furniture won't mar the good looks and smooth surface of Linotile. Employees are pleased with the floors because Linotile is comfortable and quiet underfoot, restfully diffuses light.



Armstrong makes all types of resilient floors and can therefore offer unbiased recommendations for every flooring need. For information, samples, specifications, design assistance, call the Armstrong Architectural-Builder Consultant in an Armstrong District Office, or write direct to Armstrong Cork Company, 701 Rock St., Lancaster, Pennsylvania.

Armstrong FLOORS

Approximate Installed Prices per Sq. Ft. (Over concrete, minimum area 1000 sq. ft.)

20¢
to
35¢

Decoray®
Linoleum Tile
Asphalt Tile, $\frac{1}{8}$ " (A, B, C, D)
Linoleum,
light gauge
Asphalt Tile,
 $\frac{3}{16}$ " (A, B)

35¢
to
45¢

Linoleum,
standard gauge
Asphalt Tile,
 $\frac{3}{16}$ " (C, D)
Linoleum, $\frac{1}{8}$ "
("Battleship")
Greaseproof
Asphalt Tile
Cork Tile, $\frac{3}{32}$ "

45¢
to
60¢

Corlon®
(Sheet Vinyl)
Linoleum, $\frac{1}{8}$ "
Cork Tile, $\frac{1}{8}$ "
Excelon® Tile
(Vinyl-Asbestos)
 $\frac{1}{8}$ "

60¢
to
70¢

Rubber Tile, $\frac{1}{8}$ "
Cork Tile, $\frac{3}{16}$ "
Linotile®
Corlon
(Hydrocord®
back)

70¢
to
80¢

Custom Corlon
Tile (Homogeneous Vinyl)
 $\frac{3}{32}$ ", $\frac{1}{8}$ "
Cork Tile, $\frac{5}{16}$ "
Rubber Tile,
 $\frac{3}{16}$ "

85¢
to
\$1.20

Custom Vinyl Cork
Tile
Imperial® Custom
Corlon Tile

Technical Roundup

continued from page 183

Transistorized High-Frequency Systems Developed for Lighting

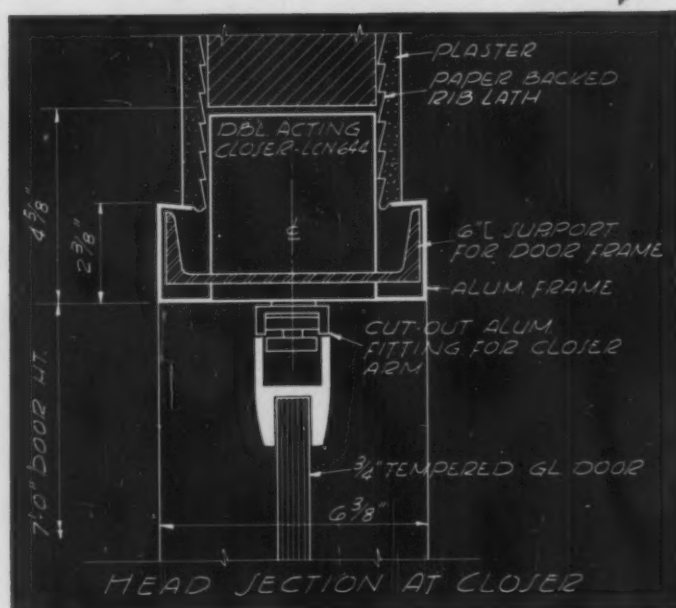
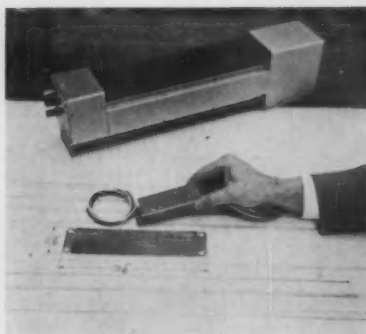
Engineers at Westinghouse Electric corporation's lighting division have announced the development of a transistorized high-frequency power source—soon to be incorporated in standard lighting equipment—which is expected to eliminate many of the technical and economic obstacles now inhibiting indoor and outdoor use of high frequency lighting.

Prototypes currently operating in a Westinghouse pilot installation supply power at 1500 cycles and 150 peak volts to 64 standard 40 watt rapid start fluorescent lamps. The new $1\frac{1}{2}$ kw. frequency converters measure 5 by 4 by $19\frac{1}{2}$ in., weigh 11 lb.—and operate at a full load efficiency of about 94 per cent.

Incoming three-phase power at normal distribution voltages is first rectified by a diode bridge, then converted by two groups of power transistors which conduct alternately and work with auxiliary circuits to provide a 150v alternating peak output. Frequency can be fixed at virtually any point in the audio range, with the shape of the wave form determined by the circuitry of the final stage. (Output shown on the scope in the photo at right above is a 1500 cycle sinusoidal wave peaking at 150 volts.) The use of semiconductors in the design assures frequency stability over a wide load and input voltage range; and the transistorized frequency converters can be installed very near to the lighting load without long high-frequency distribution runs.

The possible reduction in ballast size—a major advantage of high-frequency systems—is shown in the photo above left. The black rectangle represents the area occupied by a 60 cycle ballast for two 40 watt 48 in. rapid start lamps. The equivalent 1500 cycle ballast above it is about the size of a package of king-size cigarettes and weighs only a few ounces. Its four watt loss is about 25 per cent that of the best 60 cycle ballasts for the same lamps. Thus for any given level of illumination, the high-frequency system requires less power input, reduces the heat dissipated in the ballasts, and needs less overhead space and ceiling structure to house and support the luminaires. A promising implication is that changing the geometry of the ballasts will open the way for major changes in luminaire design.

more roundup on page 200



CONSTRUCTION DETAILS

for LCN Overhead Concealed Door Closer Shown on Opposite Page

The LCN Series 644-666 Closer's Main Points:

1. Flap-free control for double-acting doors
2. Handles exterior doors of normal height up to 3'6" wide; interior doors to 4'0"
3. Power applied by a lever arm; in-swing and out-swing are adjustable separately
4. Used for wood, metal or tempered glass doors having top members $1\frac{1}{4}$ " thick or more
5. Pivots included. Hydraulic back-check. No special threshold needed.

Complete Catalog on Request—No Obligation
or See Sweet's 1957, Sec. 18e/La

LCN CLOSERS, INC., PRINCETON, ILLINOIS

Canada: Lift Lock Hardware Industries, Ltd., Peterborough, Ontario



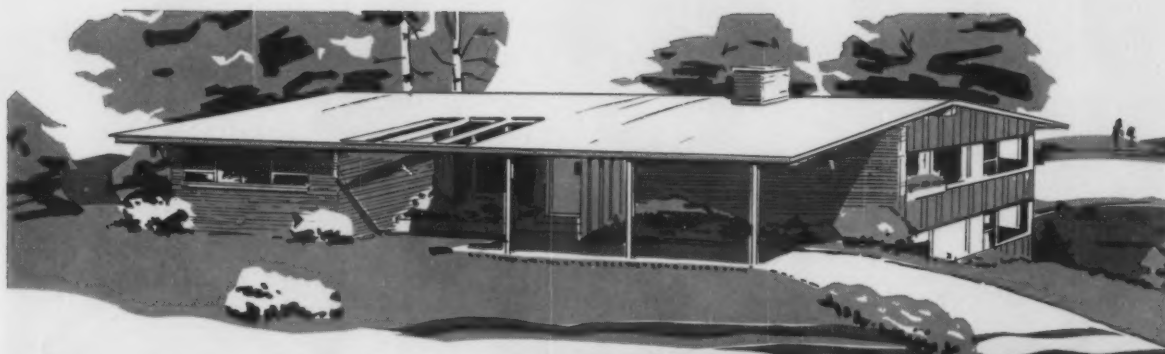
The Austin Company, Engineers and Builders

MODERN DOOR CONTROL BY *LCN* • CLOSERS CONCEALED IN HEAD FRAME

OFFICES OF AUTOMATIC ELECTRIC COMPANY, NORTHLAKE, ILLINOIS

LCN CLOSERS, INC., PRINCETON, ILLINOIS

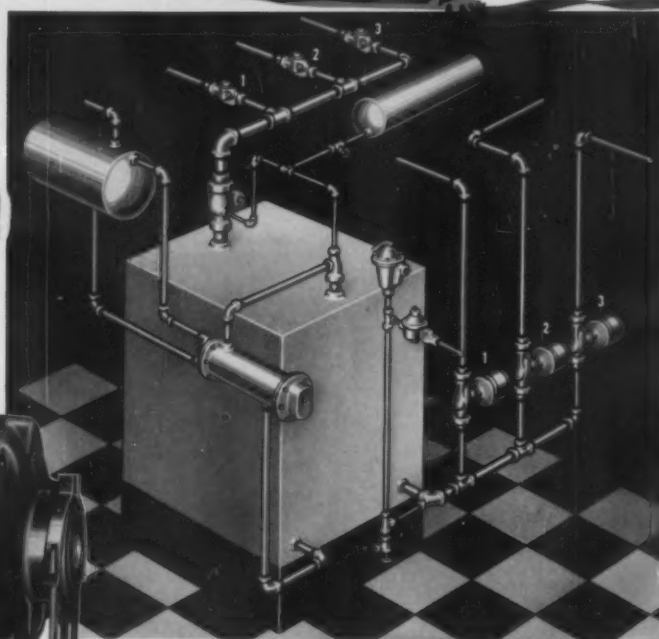
Construction Details on Opposite Page



Outstanding Sales Feature for Today's Homes!



Thrush Water Circulator



A three-zone Thrush Hot Water Heating System

THRUSH *Radiant Hot Water Heat*

ONE REAL VALUE that will sell a home quicker and at a greater price is Radiant Hot Water Heat. Home buyers recognize the greater comfort it provides, the fuel economy and the fact that the home retains a higher resale value for years longer.

A zoned system with Thrush Forced Circulation provides constant radiant heat and uniform temperatures in each zone, regardless of outdoor weather changes. That's a real sales feature that can be provided at lowest cost with Thrush equipment.

See our catalog in Sweet's or write Department J-1 for more information.



Free Booklet
on Request

H. A. THRUSH & COMPANY
PERU, INDIANA



WHAT'S NEW IN DOORS AND FRAMES?

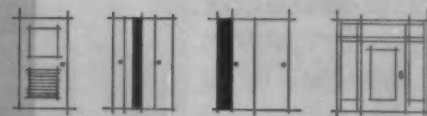


Amweld® takes on new dimensions with its newest line of steel doors and frames. An entirely different concept has been applied to these building products designed for architects and contractors who are finding commercial and light construction a profitable complement to their other building activities.

Amweld's new commercial doors and frames offer durability, low cost installation, and freedom from call-backs — plus practical contemporary styling. Both flush and recessed panel doors will be available in rail and style construction — many unique innovations in frame design.

Be sure to see the latest thing in steel doors and frames when you are in Chicago. Preview showing at the N.A.H.B. Builders Show, Booths 25 and 26, Conrad Hilton.

For complete information on Amweld's doors, frames, and closet units, send for free catalog today.



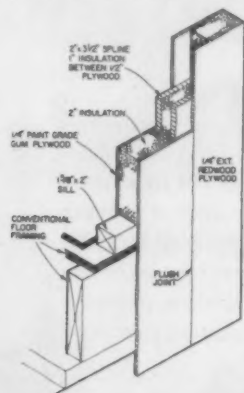
AMWELD® BUILDING PRODUCTS DIVISION
The American Welding & Manufacturing Co.
340 Plant Street Niles, Ohio

Technical Roundup

Prefab Panels Frame Walls, Roof of Michigan Residence

Above its conventional masonry basement and floor framing system, the residence designed by architect Daniel W. Toshach for himself, his wife and four small children departs radically from standard frame construction.

Its walls are made up of load-bearing panels prefabricated from 2 in. cores of plastic foam sandwiched between sheets of $\frac{1}{4}$ in. plywood—redwood on the exterior, paint grade



gum plywood on the interior. As shown below, the panels are glued to the sill at the floor line, and secured to one another with 2 by $3\frac{1}{2}$ in. splines made up of $\frac{1}{2}$ in. plywood laminated to both sides of a one inch foam core. The use of sandwich construction for the splines as well as for the panels themselves produces a continuous envelope of insulation—and a virtually perfect vapor barrier—around the perimeter of the house.

To form the roof, Toshach used similar panels of 2 in. plastic foam cores between thin (.018 in.) sheets of polyester fiberglass. These were glued directly to the supporting 4 by 8 and 4 by 10 in. beams, their

butt joints glued and a glue bead formed over the joints. The roof was then edged with a fiberglass channel and flashed with an angle section, both of which were glued to the structural roof panels.

Opaque blue-tinted panels of white-pigmented fiberglass over a blue fire-retarding core roof most of the house—performing multiple duty as structure, insulation, vapor barrier, finished ceiling and finished roof. In the laundry, interior bathrooms and basement stairwell, however, translucent “skylights” of unpigmented glass fiber over a white insulating core replace the opaque panels. *more roundup on page 204*

**HOW
LONG
IS A
LONGSPAN
JOIST?**

HAVEN-BUSCH
Company

DESIGNERS — FABRICATORS — ERECTORS

SINCE 1888

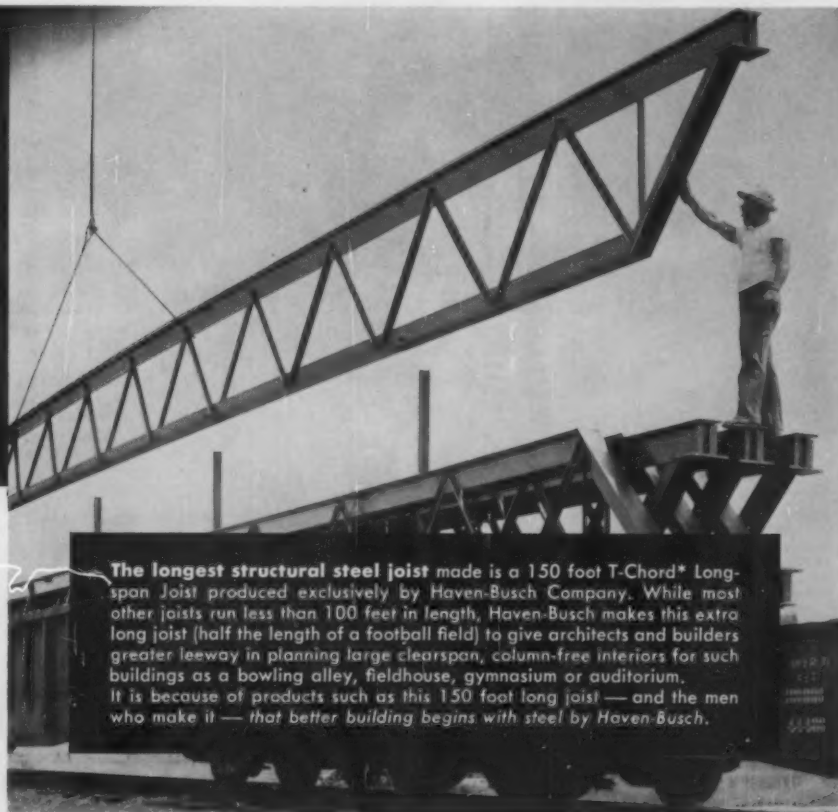
T-Chord® Longspan Joists Structural Steel

Miscellaneous Iron

3443 CHICAGO DRIVE, S.W.—GRANDVILLE, MICH.

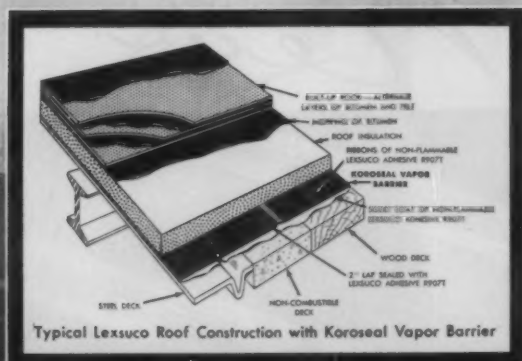
PHONE: LEneX 2-3641

*T.M. Reg.



The longest structural steel joist made is a 150 foot T-Chord® Longspan Joist produced exclusively by Haven-Busch Company. While most other joists run less than 100 feet in length, Haven-Busch makes this extra long joist (half the length of a football field) to give architects and builders greater leeway in planning large clearspan, column-free interiors for such buildings as a bowling alley, fieldhouse, gymnasium or auditorium. It is because of products such as this 150 foot long joist — and the men who make it — that better building begins with steel by Haven-Busch.

B.F. Goodrich



Three Jobs in One Pass. This Lexsuko applicator applies non-flammable Lexsuko Adhesive R907T to the underside of Koroseal Vapor Barrier, lays and secures the Koroseal, and places ribbons of adhesive on top of the Koroseal for securing insulation—all in one easy operation.

Lexsuko roof construction with Koroseal ... easily installed—won't feed a fire

LEXSUKO Fire-Retardant Roof Constructions with Koroseal Vapor Barrier will not feed a fire. That's because there is no asphalt between roof deck and insulation to give off flammable gases. Exclusive non-flammable Koroseal replaces asphaltic materials, and may be secured between deck and insulation with either Lexsuko clips or non-flammable Lexsuko Adhesive R907T.

Lexsuko Roof Constructions are fire retardant with a Factory Mutual Class I rating, and can often influence insurance rates and reduce sprinkler requirements,

depending upon building contents.

Installation is simple, fast and economical. The illustration above shows a typical installation procedure on a large job. Small installations are fast and easy, too.

To protect building investment against fire disaster as well as moisture damage, always specify a Lexsuko Roof Construction with Koroseal Vapor Barrier. There is no "or equal". Koroseal Vapor Barrier is a specially compounded fire retardant material made by B.F. Goodrich Industrial Products Company, Marietta, Ohio.

B.F. Goodrich

INDUSTRIAL PRODUCTS CO.
MARIETTA, OHIO

LEXSUKO, INCORPORATED Dept. AE-1
4815 Lexington Ave., Cleveland 3, Ohio

Please send me free informative folder on the Lexsuko system of roof construction.

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Company

Address

City Zone State

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In Extruded Aluminum

by TITUS

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Linear Type

AIR DIFFUSING GRILLES

These new grilles have all the characteristics necessary to open a vast new field of design opportunity—TRUE ARCHITECTURAL BEAUTY—OUTSTANDING PERFORMANCE—REAL VERSATILITY.

Titus new linear type diffusers are *perfect for continuous line use in sidewalls—window sills—floors...* IN BANKS, SCHOOLS, HOSPITALS AND OTHER PUBLIC BUILDINGS.

Now available in $1\frac{1}{2}$, 2, $2\frac{1}{2}$, 3, $3\frac{1}{2}$ and 4-inch widths—with rear set of individually adjustable Airfoil louvers, multi-shutter and opposed blade dampers. *Furnished in any width or length on special order.*

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TITUS MFG. CORP. WATERLOO, IOWA

Rush me new FREE Catalog that gives complete information (including engineering data) on Titus Linear Type Grilles.



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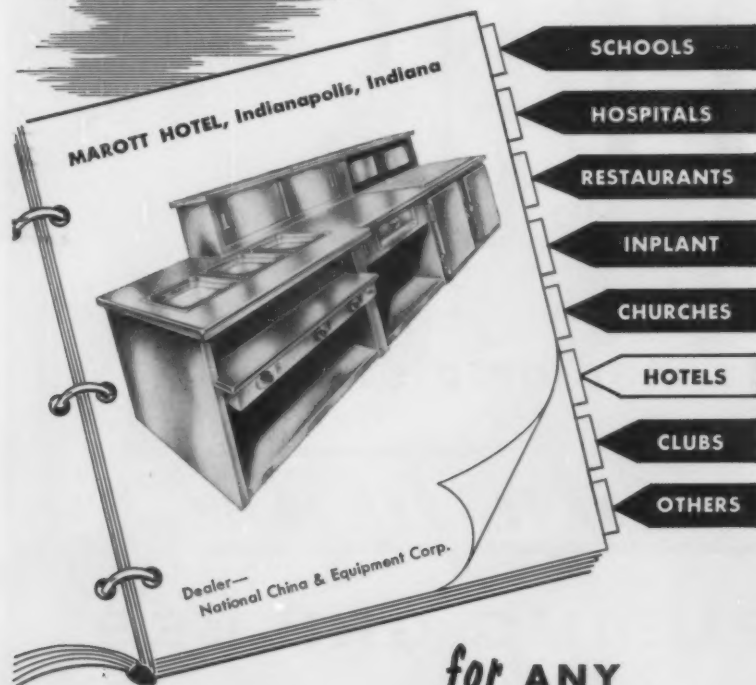
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For years Southern has consistently and successfully created special food serving equipment to meet the most unusual performance demands. "Custom-Bilt by Southern" equipment can be designed, engineered, fabricated, installed and expertly fitted to available space for any food service operation. Get expert help today—call your "Custom-Bilt by Southern" Dealer, or write to Southern Equipment Company, 4550 Gustine Ave., St. Louis 16, Mo.

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Technical Roundup

Field-Assembled Aluminum Sandwiches Cut Industrial Wall Costs

At three recently completed American Can Company plant construction projects, wall installation costs were cut a minimum of 30 per cent through the use of field-assembled insulated aluminum sandwich walls. All elements of the walls—aluminum or steel inner skin, fiberglass insulation and aluminum exterior skin—were installed with Nelson *Setlok* shoulder-type studs, end-welded to structural girts. Because all work was handled from one side, there was no need to drill structural members nor to use tees or channel spacers.



The inner skin of .024 in. aluminum or 24 ga. steel was first impaled over the studs and held in place with speed clips. One or 1½ in. thick fiberglass insulation was then similarly impaled and the outer sheet—usually .032 in. ribbed embossed aluminum—driven over the studs. To finish the walls, aluminum caps were hammered into position on the tips of the studs, the aluminum of the caps flowing into and gripping serrations on the stud tips.

Least expensive of the three projects was a coil processing plant and warehouse at Tampa, Florida, which was bid at \$1.22 per sq. ft for a field-assembled sandwich wall with galvanized steel inner skin and one inch insulation.

On a similar curtain wall job in San Antonio, Texas, bid price was \$1.342 per sq ft for a wall with 1½ in. fiberglass insulation, an inner skin of corrugated embossed aluminum sheet, and exterior sheets of ribbed embossed aluminum extending 22 ft from wainscoting to eaves.

The stud-secured curtain wall used for a third installation at Hillside, N. J., made possible a labor saving of 30 per cent over an alternate fastening procedure which would have required sub-girts and self-tapping screws. In spite of such additional features as a vapor barrier between the insulation and inner skin, the wall was bid at \$2.00 per sq. ft.



Mr. Scholz (left) at the site of one of his nationally distributed "Mark 58" prefabricated homes with Ken Sprengel of the Telephone Company

"Concealed telephone wiring adds sales appeal to our homes"

—says Mr. Don Scholz, of Scholz Homes Incorporated, Toledo, Ohio

"I compare selling new homes with selling new cars," says Mr. Scholz. "New homes have to be more attractive and more modern than what the public has had before, or they won't sell."

"Concealed telephone wiring is a feature that helps give prefabricated homes such as we manufacture the added sales appeal that attracts buyers. We merchandise it with the many other modern conveniences we offer. It's a valuable sales aid, and we take full advantage of it as such."

Mr. Scholz began manufacturing prefabricated homes in 1953, and last year sold 1500 units at an average completed sales price of \$30,000 each.

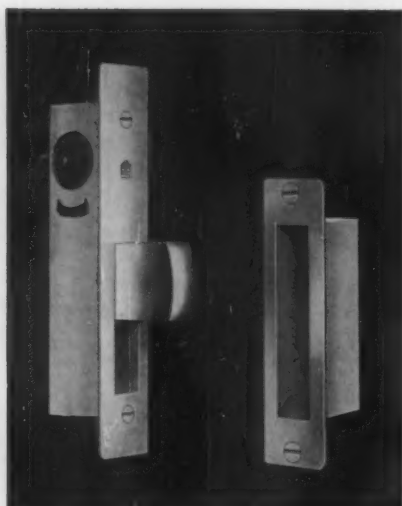
This year Mr. Scholz's "Mark 58" home will be nationally advertised and distributed. In today's competitive market, Mr. Scholz, like many other trend-minded builders across the country, recognizes concealed telephone wiring as an indispensable modern sales feature.

* * *

Your nearest Bell Telephone business office will help you with concealed wiring plans. For details on home telephone wiring, see Sweet's Light Construction File, 8i/Be. For commercial installations, Sweet's Architectural File, 32a/Be.

Working together to bring people together . . . **BELL TELEPHONE SYSTEM**





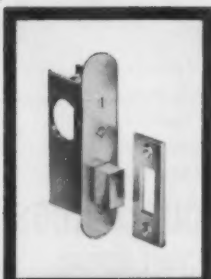
Maximum Security Narrow Stile Locking Devices

For New or Replacement Installations

Whether you specify, install, or sell narrow stile locking devices, you can be confident that Adams-Rite offers the utmost in design, construction, simplicity and safety. Check these advanced ideas that insure top performance and lasting customer satisfaction:

Illustrated above—Maximum Security 1850 Deadlock:

This is the unit that provides Maximum Security for modern narrow stile swinging glass doors. The pivoted bolt actually bridges the opening with a bar of steel, retaining as much bolt within the lock stile as is projected. Its protection is so great that forced entry is impossible without destruction of the door itself.



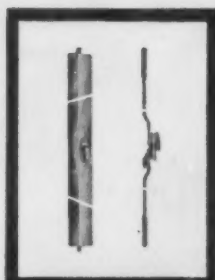
970 Minimum Backset Deadlock:

This unit provides economical deadlocking for rigid narrow stile swinging doors. Like all Adams-Rite narrow stile locks, the 970 Series operates with standard mortise type cylinders of any make.



1450 Deadlocking Latch:

Traffic control is made possible in a narrow stile swinging door entrance by use of the 1450 Series Deadlocking Latch. Two-way traffic flow or restricted entrance is achieved by a simple selector. Ideal for any public area with a closing-hour problem, such as banks, markets, apartment houses, etc. It satisfies building and safety regulations.



MS 1849 Two-Point Door Bolt:

The modern method for locking the inactive door of a pair of narrow stile doors. Top and bottom bolts are locked or unlocked by natural operation of an attractive turn conveniently located on the inside surface. Positive deadlock of both doors is automatically provided when cylinder deadlock is thrown.



1848 Deadlock for Narrow Stile Sliding Glass Doors:

Every sliding glass door deserves the same protection demanded of any other exterior door. The 1848 gives security with an adjustable heavy hook type bolt with which turn and cylinder controls are used. For added safety, the bolt collapses if the door is accidentally shut while bolt is projected.



1340 Series, Deadlock and Latch:

Combination deadlock and latch for narrow stile swinging doors. A simple selector changes the unit from free swinging to latch action. The positive latch action helps prevent air losses when temperature control systems are used.

Specify, Sell, Install the Finest

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MANUFACTURING COMPANY

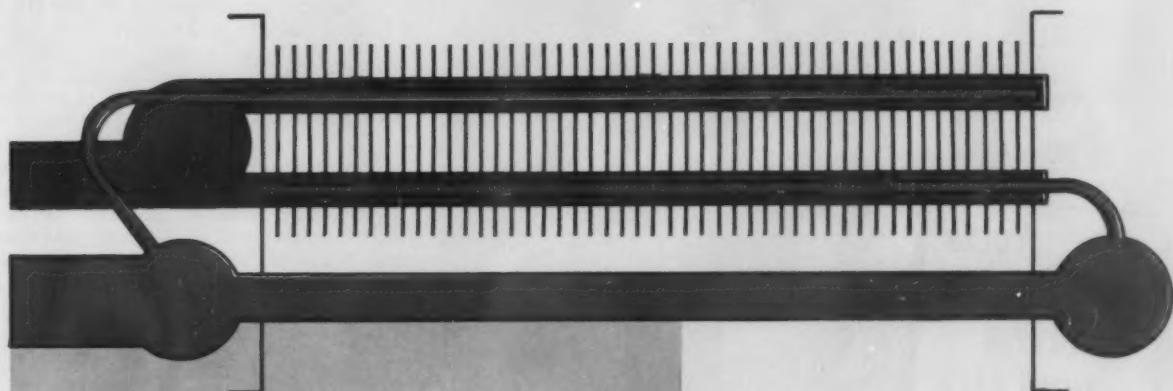
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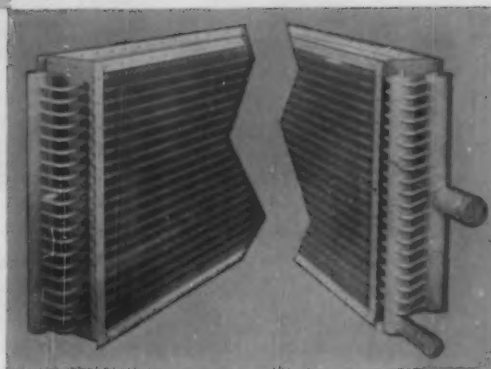


**Uniform Surface Temperatures
Regardless of Fluctuating Load
Demands**

This unique new steam coil provides uniform leaving air temperatures, free of all stratification. The design also gives maximum possible protection against freeze-ups not available before.

Fins of the new Evntemp coil are of the continuous-plate type which contact the entire surface of the condensing tubes, assuring efficient, uniform heat transfer. Tubes are pitched in the casing for rapid condensate drainage and ease of installation.

Complete information on the new Evntemp steam coil is available on request. Write today.



MARLO coil co.

SAINT LOUIS 10, MISSOURI

Quality Air Conditioning and Heat Transfer Equipment Since 1925



At top of page, new bearing ring plant of The Fafnir Bearing Company of New Britain, Conn., at Newington, Conn. Below is view of locker and washroom. Design and construction by The Austin Company.

Note Use of Both Circular and Semi-Circular Bradleys

In this new Fafnir bearing ring plant, wash-up facilities are located in the locker-room. Note, too, that the area where a column is located is not wasted. Two Bradley *semi-circular* Washfountains, back to back, solved the problem. Ordinarily the semi-circular fixtures are used in narrower rooms and are installed at wall.

With all Bradleys, fewer piping connections are required—just three to serve 8 to 10 persons. Space is saved and water consumption greatly reduced because each Washfountain, while serving groups, uses no more than an individual wash basin. And with foot-control, *water is cut off immediately* foot is lifted from the control ring at base.

There are no faucets to manipulate or maintain. Hands need touch nothing but the clean tempered water coming from the central sprayhead.

For new buildings—for extensions to present plants, and for modernizing old washrooms—you get greater economy and user satisfaction with Bradleys.

For dimensions and complete specifications, write for Catalog 5601. BRADLEY WASHFOUNTAIN CO., 2227 W. Michigan St., Milwaukee 1, Wis.



Write for
Catalog
5601

BRADLEY
Washfountains

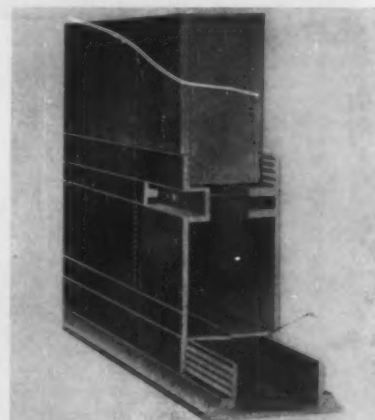
Distributed Through Plumbing Wholesalers

Product Reports

continued from page 185

High-Strength Insulation Board

Strongbord, a new $\frac{1}{2}$ in. insulation board sheathing that can be used without corner bracing, is made of pine and other wood fibers bonded together with special bituminous compounds to form a dense rigid sheet of exceptional strength and high moisture resistance. The 4 ft wide sheets come in 8 and 9 ft lengths which can easily be handled by one man. Suitable for either interior or exterior use, they can be painted with polyvinyl acetate paint or covered with finished sidings of brick, wood, stucco or asbestos. Because the sheets are thoroughly asphalt-impregnated, they are highly weather-resistant and can be used without building paper except where required by code. *Johns-Manville, 22 East 40th St., New York 16, N. Y.*



Movable Interior Wall System

A unique new interior movable wall system is designed around a series of simple aluminum extrusions, each with an elongated threaded slot into which a bolt can be threaded at any location along the extrusion. To erect partitions, a base plate is attached to the floor and an aluminum batten strip locked over it. A $1\frac{1}{8}$ in. panel is fitted into the batten and gripped firmly in place by tightening the concealed bolts. The batten strip will accommodate vertical or horizontal wiring, and base or wall outlets may be located wherever required. If windows are not desired, the wall is finished with a small batten at the top of the panel, and a cap plate which fits against the ceiling. When the extruded members are cut to desired lengths, only a screwdriver is needed to assemble the walls. *H & B Enterprise Corp., 1150 Southard St., Trenton 6, N. J.*

more products on page 212

Growing need for CAT standby power means more ways to serve your client



A 175 KW Cat Electric Set takes over within seconds if commercial power fails at Baptist Memorial Hospital, Jacksonville, Fla. Emer-

gency generator handles 35% of normal load including boiler, 12 operating rooms, 2 elevators and electric facilities for 300 beds.

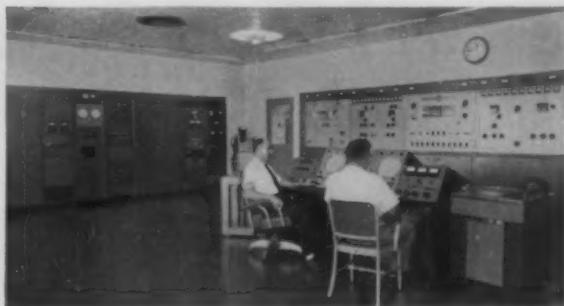
Dependable CAT* Diesel Electric Sets give emergency power protection in installations *big or small*. And increased acceptance of standby power gives architects and consulting engineers a sound opportunity to serve clients better.

Many businesses need emergency power—hospitals, hotels, banks, radio and TV broadcasting facilities, processing industries, airports (including structural additions) and shopping centers.

Your client may assume that your design will include standby power. Or, he may not have considered protection against power failure and will be impressed with your foresight in designing his facility to include a Caterpillar* diesel generator. Either way, you do a more complete job by protecting your client against costly power failure.

Engine Division, Caterpillar Tractor Co., Peoria, Ill., U.S.A.

*Caterpillar and Cat are Registered Trademarks of Caterpillar Tractor Co.



A dependable Cat D375 Diesel Electric Set (approximate 190 KW) serves as standby for the 100,000-watt transmitter of WWJ-TV in Detroit. If commercial power fails, the standby unit insures against costly loss of programming time.

ENGINE POWER

BY CATERPILLAR



Two Cat D397 Electric Sets, capacity 600 KW, protect this mammoth refrigerated vault of Food Fair Stores in Miami. 70,000 sq. ft. of food storage serve 52 Food Fair Stores in the area. Without emergency power, disrupted power could be very costly.

Dept. AR1, Engine Division
CATERPILLAR TRACTOR CO., Peoria, Illinois, U. S. A.

Send me more information about Diesel Electric Sets for standby use in government, industry and public service applications.

- ☐ I am interested in learning more about these units in general.
☐ I am interested in learning how to obtain government matching funds for purchase and installation of a Cat Emergency Power Unit.

Name

Company

Address

City Zone State

AUTOMATION

to the Nth power



MATERIAL FLOW IS AUTOMATIC

into and out of special designed Montgomery Elevators installed in midwest refinery of one of the nation's leading oil companies. Power driven roller conveyors, built in the car floors, turn until car is loaded . . . doors close and car proceeds to floor indicated . . . levels automatically, doors open automatically and conveyor starts again to unload car.

proof that "SPECIAL" is standard with MONTGOMERY

Design and construction of unusual industrial elevator installations such as these palletized material handling units are regular events for Montgomery engineers. Equally unusual requirements have been met to provide elevators for giant testing machines in famous research laboratories; for cross-over bridges in plants divided by railroad tracks; in the nation's leading parking garages; in plants requiring double-duty elevators to handle widely varying loads. Unusual, yes, but you can depend on Montgomery for all types of elevators, including passenger and attendant operated electric and hydro-electric passenger and freight elevators.

... and P. M. service

Montgomery Preventive Maintenance—P. M. Service is available across the country. Provides maintenance by highly skilled, especially trained men for all types of elevators.

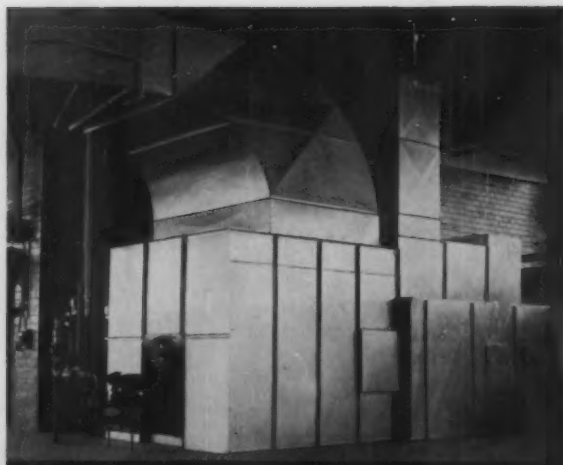
AR-158



MONTGOMERY

ELEVATOR COMPANY

Moline, Illinois — Branches and Representatives in principal U. S. cities, Canada and Mexico
 Export Office: Elevator Equipment Export Co., New York 1, N. Y.
 See Sweet's Catalog for Detail Data



Jackson & Church furnaces

solve difficult heating problems of new Crown Cork and Seal plant —

INSTALLATION DATA

PLACE:

New lithograph plant of Crown Cork & Seal Company's Can Division, Philadelphia, operating five of the latest litho presses and five coaters and ovens

REQUIREMENTS:

Dependable heating designed to supply large volume of fresh outside air replacing oxygen consumed by lithograph equipment. Summer air conditioning to utilize same ducts and fans

HEATING UNITS SPECIFIED:

Three JACKSON & CHURCH GA-4750 units, having a total air delivery of 120,000 C.F.M. and 14,250,000 Btu input

MANUFACTURER:

JACKSON & CHURCH - Div. of YORK-SHIPLEY, INC., York, Pa. (J-C furnaces - America's largest & most complete warm air heating line)

DISTRIBUTOR:

Furnace Distributors, Inc., Philadelphia, Pa.

INSTALLER: Consolidated Air Conditioning



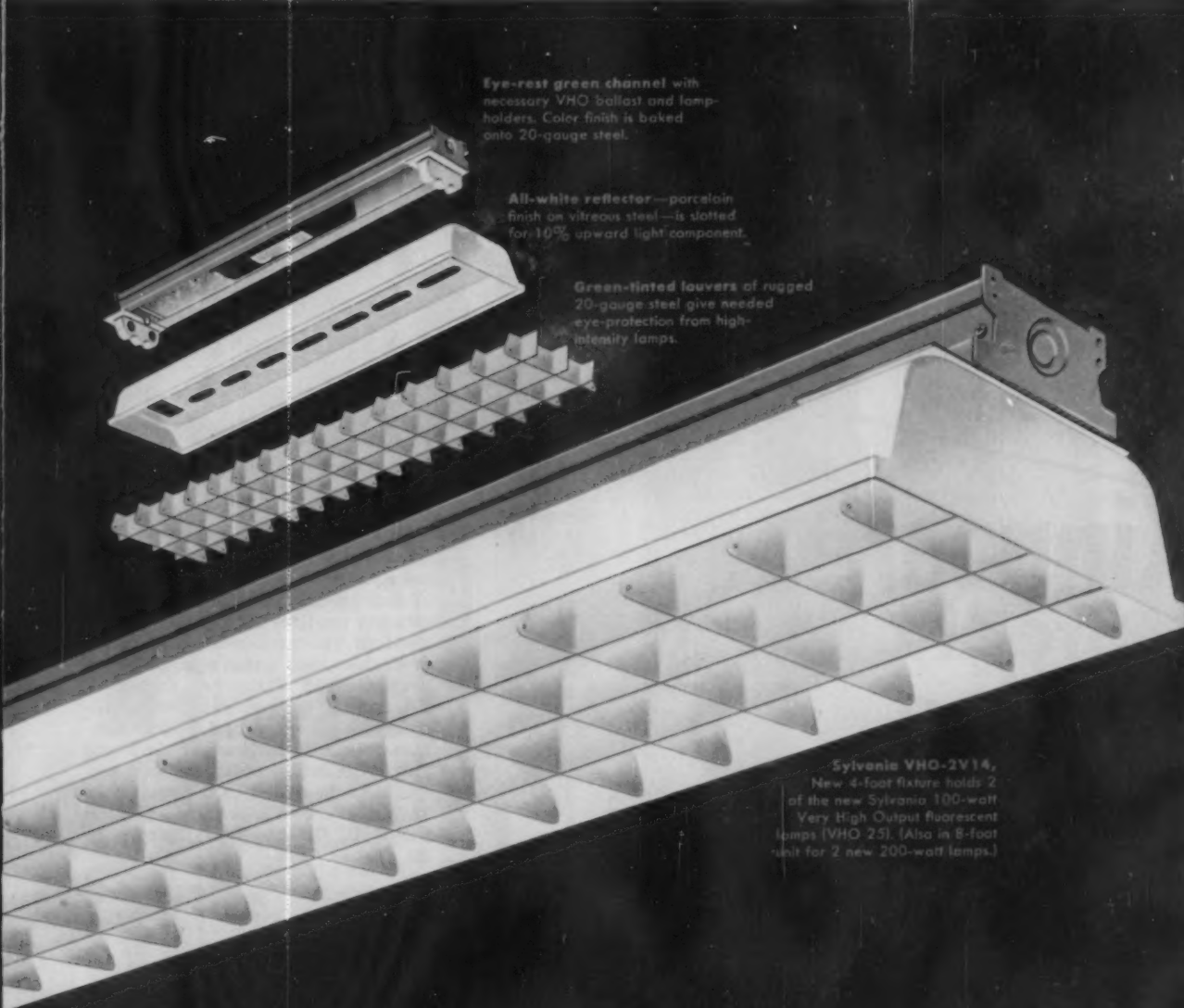
Modern facade of Crown Cork & Seal Company's new plant in Philadelphia.

J-C

JACKSON & CHURCH

Division of
YORK-SHIPLEY, INC.

P.O. BOX 349, YORK, PENNSYLVANIA



The diagram shows an exploded view of the fixture components. At the top is the 'eye-rest green channel' with ballast and lamp holders. Below it is the 'all-white reflector' with slots for light component. Underneath are 'green-tinted louvers' with a diamond pattern. At the bottom is the main fixture housing with a grid of diamond-shaped louvers.

Eye-rest green channel with necessary VHO ballast and lamp holders. Color finish is baked onto 20-gauge steel.

All-white reflector—porcelain finish on vitreous steel—is slotted for 10% upward light component.

Green-tinted louvers of rugged 20-gauge steel give needed eye-protection from high-intensity lamps.

Sylvania VHO-2V14,
New 4-foot fixture holds 2
of the new Sylvania 100-watt
Very High Output fluorescent
lamps (VHO 25). (Also in 8-foot
unit for 2 new 200-watt lamps.)

NOW—Light Output Doubled!

New Sylvania VHO Special Fixture Series

for quality lighting with the sensational new fluorescent lamp

Sylvania's new VHO Special Fixture Series harnesses the tremendous light output of the sensational VHO lamps and puts it to work effectively for you.

These higher wattage VHO lamps—recently developed in the Sylvania laboratories—mark a milestone in today's industrial lighting revolution. Though no larger in size, they deliver more than double the light output of regular fluorescents of the same length.

Sylvania's new VHO Special Fixture operates these lamps with a minimum of

glare and a maximum of eye comfort. Its "eye-rest" green channel and green tinted louvers add cool chromatic eye-comfort. Its white porcelain reflector is slotted for 10% upward light component to mellow harsh contrasts overhead.

Picture, in your own plant, where these fixtures might work effectively for you . . . in inspection areas or precision machine locations . . . for close tolerance work or for general high-bay areas.

See for yourself what Sylvania's new VHO lighting can do for morale and plant

production rates, reducing the number of rejects. See how its one-man maintenance features will cut down operating costs. Talk to your local Sylvania Fixture Specialist, or write direct for full details.

SYLVANIA ELECTRIC PRODUCTS INC.
Dept. A 20, Lighting Division—Fixtures
One 48th Street, Wheeling, W. Va.

SYLVANIA

... fastest growing name in sight

LIGHTING • RADIO • ELECTRONICS • TELEVISION

• METALS & CHEMICALS



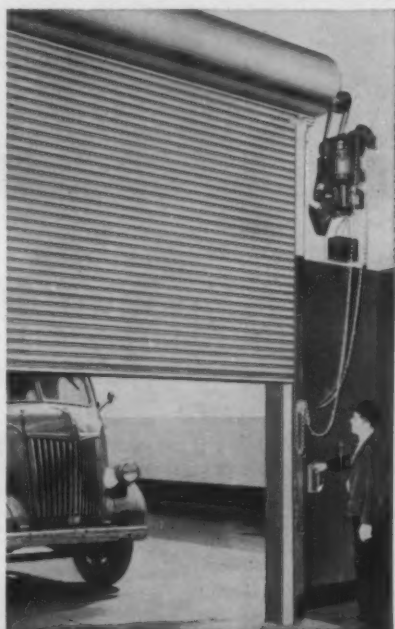
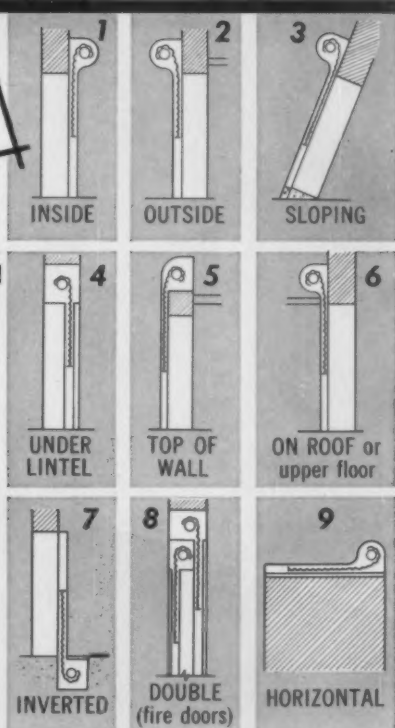
Quick Guide to
Kinnear Door
Versatility

Kinnear Steel Rolling Doors

Whether your door needs are standard or special, Kinnear Rolling Doors offer you more efficiency *more different ways* than any other type of door. For example, the coiling upward action of Kinnear's interlocking steel curtain can be applied:

1. Mounted on inside wall; coils overhead.
2. On outside wall; leaves ceiling clear.
3. Sloping doorway (chutes, hoppers, etc.).
4. Hood under lintel or concealed in wall.
5. Hood above lintel or on top of wall.
6. Hood above roof or upper floor level.
7. Inverted mounting (coil below door sill).
8. Kinnear Rolling Doors (automatic fire type) on both sides of wall for maximum fire protection.
9. Horizontal mounting (openings for observatory, ventilator or similar eqpt.).

In *every* installation, Kinnear Rolling Doors open *out of the way* . . . need no usable space for either storage or operation . . . give extra protection against fire, theft, wind, weather or vandalism. Extra heavy galvanizing assures corrosion-free durability. Built any size. Motor or manual operation. Write for full information!



KINNEAR
ROLLING DOORS
Saving Ways in Doorways

The KINNEAR Mfg. Co.

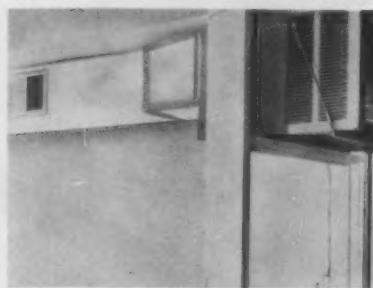
FACTORIES:

1860-80 Fields Avenue, Columbus 16, Ohio

1742 Yosemite Ave., San Francisco 24, Calif.

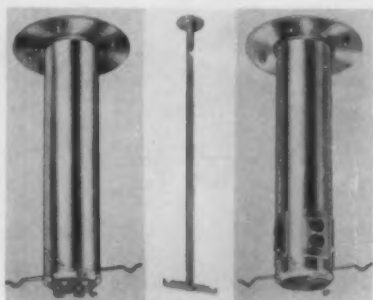
Offices and Agents in All Principal Cities

Product Reports



Store-Office Air Conditioner

Designed to fit into the transom of small store or office buildings, the 2 hp *Ductaire* delivers 590 cubic feet of cooled air per minute, can completely air condition up to 1400 sq. ft. of floor space. The self-contained conditioner requires only electrical connections (no connections for water or drains), and comes equipped with prefabricated insulated duct-work for simple, flexible, inexpensive installation. The standard duct kit contains six 4 ft sections of duct and two outlet grills; additional duct sections can be added to the system as required. *Westinghouse Electric Corp., P. O. Box 2099, Pittsburgh 30, Pa.*



Overhead Hospital Equipment

More efficient use of floor space in surgical and recovery rooms is made possible by overhead installation of gas, vacuum, intravenous and electrical services. Three new products which clear floors of stands, tanks, hoses and wires are shown above. The surgical gases dispenser unit at right can be used with any standard coupler to dispense gases, surgical air or vacuum; the overhead intravenous equipment support (center) eliminates cumbersome tripod stands; and the overhead electrical unit (left) provides electrical service where it is needed, clears floors of wires and outlets. Both electrical unit and gases dispenser unit can be had with intravenous hooks attached. *Logan Hospital Equipment Co., P. O. Box 751, Glendale, Calif.*

more products on page 216

ANOTHER HOMASOTE FIRST

FOR
WALLS
AND
CEILINGS—

Panl-Tile

PLAIN OR PERFORATED

—on each 4' x 8' panel
thirty-two 12" tiles or
eighteen 16" tiles

—PLUS 75 wholly new tile sizes
from 8" to 48" on a side

The architect and builder have long known the beauty of tile—whether ceramic or of any other material. They have also known its three major handicaps: (1) only a master craftsman can approximate true alignment; (2) the costs of both materials and labor are high; (3) limitations in tile size and shape tend to limit creativeness in wall or ceiling design.

Panl-Tile meets all these former limitations. *We would like to send you three informative pieces of literature.* The first gives the answers on both economy and true alignment and pictures 27 possible color treatments. The second shows 75 patterns whereby you can create your own tile designs in terms of sizes and shapes—from 8" to 48" on a side. The third suggests 111 different ceiling designs and the exact materials list for each.

Add to these your own color sense—and the infinite possibilities for 3-dimensional

surfaces (through your judicious use of moldings)—there is no limit to your design possibilities.

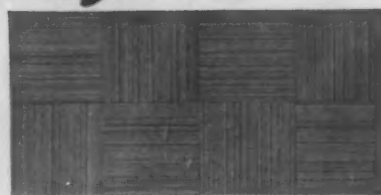
A 3-stage groove-lap joint—on all four edges—assures both the alignment and a weather-tight joining. Since Panl-Tile is weatherproof Homasote, you have the usual high qualities of structural strength, insulation, sound-deadening and the perfect surface for any paint or stain.

For increased sound-deadening value, Panl-Tile is available—in the 12" x 12" and 16" x 16" tile sizes—with funnel-like perforations. Less costly than true acoustical panels, but far more effective than plaster or most other materials.

In ceiling applications, the economical "Wilson Air-Float" method adds sound-deadening protection and reduces sound transmission from above.

Use coupon below to secure full details on this and other Homasote products.

THIS IS ONE PANEL
4' WIDE
8' HIGH



STRIATED OR WOOD-TEXTURED PANELS combine beauty with insulation and structural strength. Cut and position the STRIATED for basket-weave, herringbone or straight design. The WOOD-TEXTURED panels are individually molded from actual spruce boards. Both types are made in 16", 32" and 48" widths—in 8' lengths. Packaged—2 of each width or 128 sq. ft.



HOMASOTE COMPANY

In the U.S., kindly address
Trenton 3, New Jersey. In
Canada: Toronto, Ont. — P.O.
Box 35, Station K • Montreal,
P.Q. — P.O. Box 20, Station N



Send the literature and/or specification data checked:

- | | |
|---|--|
| <input type="checkbox"/> PANL-TILE | <input type="checkbox"/> UNDERLAYMENTS |
| <input type="checkbox"/> WILSON AIR-FLOAT CEILINGS | <input type="checkbox"/> GROOVED VERTICAL SIDING |
| <input type="checkbox"/> STRIATED AND WOOD-TEXTURED | <input type="checkbox"/> HOMASOTE (72-PAGE) HANDBOOK |

Name

Address

City Zone State A-8



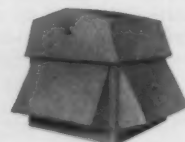
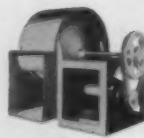
BIG BLOWERS ARE BIG BUSINESS WITH PEERLESS

QUIET! • TROUBLE-FREE! • DEPENDABLE! • HEAVY DUTY! • GUARANTEED!

Versatility in size, application, and engineering has always been a Peerless strong point. Peerless builds its own motors and matches them to the specified blower requirements. Peerless blower frames and housings are usually heavier than any competitive products. Result—a quiet, vibration-free unit.

These are not "off-the-shelf" units, but built to customer rotation and discharge specifications. Each one receives 100% inspection before it leaves the Peerless factory. Each unit is built to NAFM standards. Motors are built to NEMA standards. Each unit is ready for operation when received at the installation site.

A COMPLETE LINE OF AIR MOVING EQUIPMENT



Charter Member of the Air Moving and Conditioning Association, Inc. [AMCA]



FAN AND BLOWER DIVISION
THE Peerless Electric[®] COMPANY
 1448 W. MARKET ST. • WARREN, OHIO
 FANS • BLOWERS • ELECTRIC MOTORS • ELECTRONIC EQUIPMENT

Write Today for
 Bulletins SDA-220,
 SDA-200 and SDA-160.



Masonite Contemporary Studies



Design Series No. 101M—Protected Exterior

MASONITE® PEG-BOARD® again demonstrates its potential in contemporary design...this time, protected exteriors. Peg-Board here illustrates just one of the many ways it can complement your finest designs. Unlimited possibilities...exterior, interior...commercial, industrial, residential.

An important consideration for you is

Client Satisfaction. Masonite's contribution to design that satisfies is a completely versatile line of hardboard panels plus a continuous development of products for new architectural applications.

For current product information, consult Sweet's Architectural File and your Masonite Representative, or send the coupon.

MASONITE
Panel Products

©Masonite Corporation—manufacturer of quality panel products.

Masonite Corporation, Dept. AR-1, Box 777, Chicago 90, Illinois
In Canada: Masonite Corporation, Gatineau, Quebec

Please send more information about 1/4" heavy-duty Masonite Peg-Board panels and other Masonite exterior panel products.

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Firm.....

Address.....

City..... State.....

Zone..... County.....

STATE MUTUAL Assures WALKING SAFETY



Architects: Hoyle, Doran and Berry

**Multi-million dollar
new home of**

**State Mutual Life Assurance Company
of America, Worcester, Mass.**

Lobbies, escalator landings, twenty-six stairways (pre-cast treads) are made safe in any kind of weather by terrazzo containing ALUNDUM Aggregate. These safe, long wearing walking surfaces are in keeping with the beauty of this outstanding structure.

See our catalog in Sweets or
write for a copy of No. 1935 R.

NORTON
NON-SLIP FLOORS

**NORTON COMPANY
WORCESTER 6, MASS.**

ALUNDUM AGGREGATE for Terrazzo and Cement • ALUNDUM STAIR and FLOOR TILE

Product Reports



Reproductions on Canvas

A new photomechanical printing process which makes possible the printing of up to 18 colors with perfect registration is being used to reproduce—on canvas—many of the world's most famous paintings. In addition to providing the architect or interior designer with a valuable decorating tool, these exceptionally fine facsimiles have the advantage of being virtually maintenance-free. They are impervious to dampness, water or fading, require no glass or varnish, and can be cleaned with a vacuum cleaner. A wide range of canvases—including paintings by Monet, Cezanne, Renoir, Van Gogh, Gauguin, Utrillo, Modigliani and Corot—are currently available. *Artistic Imports, 225 Fifth Ave., New York, N. Y.*



Dual Element Speaker System

Essentially a convertor of acoustic radiation, the *Amphora* is said to reproduce bass frequencies without parasitical resonance, and treble without overtones. The dual element device is comprised of two principal

continued on page 218

This school was a top award winner in the Fifth Annual Competition for better school design sponsored by the School Executive magazine.



WILBERT SNOW ELEMENTARY SCHOOL, MIDDLETOWN, CONN.

Architect: Warren H. Ashley

Contractor: Wadhams & May Company

HOPE'S WINDOWS were chosen for this award winning school



● An unusual feature of Wilbert Snow School is that administrative offices, cafeteria facilities, a large gymnasium and the classroom units (see insert above) are all housed in separate buildings as shown in the small aerial view at left.

The adaptability of Hope's Windows to any type of building design is well illustrated by their application to the various buildings of this school. For example, in the classroom units a full window wall elevation, plus an upper ribbon of windows encircling the entire unit, provides abundant controlled daylight with healthful comfort for young eyes in each classroom. Note that a door for each classroom has been included as a safety factor and traffic convenience in the window wall elevation.

Write for our new Window Wall catalog No. 152R or call your local Hope's representative where additional information and planning assistance are always available without obligation.

Since

HOPE'S

1818

HOPE'S WINDOWS, INC., *Jamestown, N. Y.*

STEEL WINDOWS HAVE THE STRENGTH AND RIGIDITY THAT NO OTHER WINDOW CAN MATCH

NOW!... ONE MAN CAN MAINTAIN HEAVY LUMINAIRES AT FLOOR LEVEL WITH **THOMPSON TRIPLEX HANGERS**



A Only a detachable hand-line is required to disconnect and lower a luminaire.

B Relamping and cleaning are accomplished in minutes at floor level.

C After servicing, luminaire is quickly and positively re-positioned by handline.

Designed to handle hi-bay luminaires weighing up to 120 pounds, the new Thompson **TRIPLEX** Hanger is the most practical means of servicing heavy fixtures quickly, safely, economically. It is recommended for use with new fluorescent luminaires featuring ultra-high output lamps and clusters of mercury and incandescent fixtures.

TRIPLEX Hangers permit one unskilled man to relamp and clean a luminaire without climbing or electrical hazards . . . extra manpower . . . space-consuming scaffolds . . . costly auxiliary equipment.

Featuring a new multiple-fall pulley system with a 3-to-1 mechanical advantage, the **TRIPLEX** Hanger is fabricated from durable corrosion-resistant components to assure years of dependable service and trouble-free performance.



For specification details, write today for Bulletin TR-57.



THE THOMPSON ELECTRIC CO.

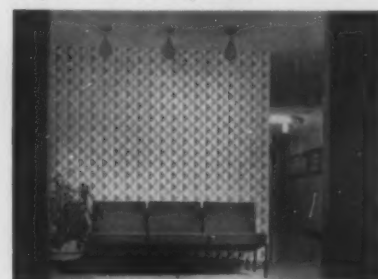
P. O. Box 873-C

Cleveland 22, Ohio

Product Reports

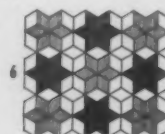
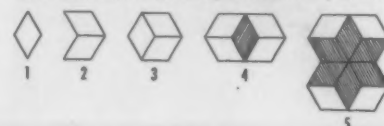
continued from page 216

components: the ellipsoidal "shell" or reflector which concentrates and diffuses all frequencies above 800 cps.; and the double-cavity resonator which corrects and assists the spread of unbroken and uncolored bass. Height of the speaker without reflector is 23 in., its greatest outside diameter is 17½ in. According to its manufacturer, the *Amphora* conveys unusual "presence" effect, an almost three-dimensional impression and outstanding intelligibility. It is said to be particularly suitable for stereophonic sound. *Ultra Co., 11 West 42nd St., New York 36, N.Y.*



Byzantine-Styled Ceramic Tile

Armed with camera, notebook and new ideas on an old subject, Kenneth Gale, Director of Design for the Mosaic Tile Company, arrived in Italy in March, 1955, to study the ancient art of mosaics. Three years later, the flavor of the Byzantine motifs was recaptured in Mosaic's new *Byzantine* line of ceramic tile. The basic tile shapes are diamonds, squares and diagonal halves of squares, each available in a palette of seven earthy colors—pebble white, black, dark gray, light gray, light beige tan, light buff and red. By combining these shapes and colors, Mosaic has developed a number of basic patterns on which a multitude of variations may be based. The photo above illustrates a typical design composed of squares and diagonal halves; the sketches below trace the development of a *Byzantine* design from a single geometric figure. *The Mosaic Tile Co., Zanesville, Ohio.*

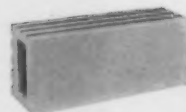
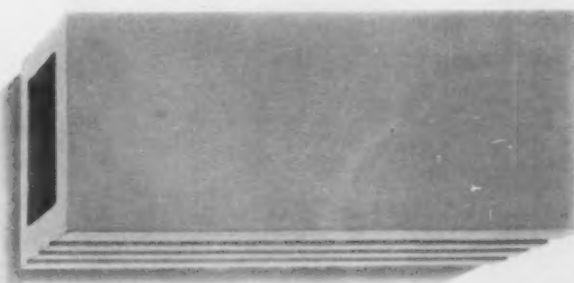


more products on page 224

BACKGROUND FOR SERVICE NATCO CERAMIC GLAZE

VITRITILE SANITARY

VERSATILE ECONOMICAL



By combining proven permanence with a smooth colorful surface that requires only soap and water cleaning, Natco Vitritle qualifies as the ideal material for modern food preparation and serving areas.

In addition, Natco Ceramic Glaze Vitritle provides a sound, fireproof, structural wall with an attractive interior finish in a single operation . . . at one cost. And it's available in 21 carefully selected colors and in three large face sizes to permit complete design and aesthetic freedom.

Write for General Catalog S-57.

SIZES AND SHAPES

Series	Tile Face Size	Nominal Thickness
"8W"	7 $\frac{3}{4}$ " x 15 $\frac{3}{4}$ "	2", 4"
"6T"	5 $\frac{1}{4}$ " x 11 $\frac{3}{4}$ "	2", 4", 6", 8"
"4D"	5 $\frac{1}{4}$ " x 7 $\frac{3}{4}$ "	2", 4", 6", 8"

NATCO



NATCO CORPORATION

GENERAL OFFICES: 327 Fifth Ave., Pittsburgh 22, Pa.

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**"Frank
Adam**


**busduct added
to the efficiency,
economy and
flexibility of our
plant operations"**


"Based on our experience," says B. E. Robinson, master mechanic of Aluminum Industries, Inc., of Cincinnati, O., "I certainly recommend Frank Adam Busduct to any company interested in maximum production efficiency.

"Frank Adam Busduct added substantially to the efficiency, economy and flexibility of our plant operations. It enables us to make quick changes in plant layout without disrupting production, cuts maintenance costs to a minimum and affords other economies by reducing power losses and voltage drop to a minimum."

Take a leaf from Mr. Robinson's book of experience. Give your clients power distribution geared to their needs. Specify Frank Adam Busduct, the modern system of power distribution in all your future plans. Consult Sweet's architectural or contact your nearest  representative for additional information.

 General view of plant of Aluminum Industries, Inc., at Cincinnati, O.

 Selden High of Sullivan Electric Company, electrical contractor of Cincinnati, O., discussing Frank Adam Busduct with Clifford Manderschied.

 Interior view of the Aluminum Industries plant showing Frank Adam Hi-Efficiency Feeder Duct with a Shuttrak tap off switch to plug-in duct.



FRANK ADAM ELECTRIC COMPANY

BOX 357, MAIN P. O. • ST. LOUIS 3, MO.

makers of

*busduct • panelboards • switchboards • service equipment
safety switches • load centers • Quikheter*

Rx

Prescription for Water Hammer:



SHOCK TREATMENT



SHOCK ABSORBERS

keep pipe lines quiet

Unwanted noise has no place in a hospital. Yet, a midwestern hospital tried almost everything to eliminate the noise of water hammer occurring in pipe lines from the institution's laundry machines. When Josam Shock Absorbers were installed and pressure surges reduced, the water hammer disappeared. This is only one case out of hundreds where Josam Products have been called on to do the extraordinary task because they have "more" with which to do it. That is why they also perform better and last longer. Send coupon for complete details on Josam Shock Absorbers.



Series No. 1480

For installation on supply lines having normal pressures.

Series No. 1480-DF

is pressurized for installations on supply lines having static water pressures up to 125 p.s.i.

JOSAM DOES EVERY JOB BETTER BECAUSE ONLY HAS THE RIGHT PRODUCT FOR EVERY JOB



JOSAM MANUFACTURING COMPANY

General Offices and Manufacturing Division
MICHIGAN CITY, INDIANA

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Josam products are sold through plumbing supply wholesalers.

JOSAM MANUFACTURING COMPANY
Dept. AR-1, Michigan City, Indiana

Please send copy of Manual SA on Shock Absorbers

Firm.....

By.....

Address.....

City.....Zone.....State.....

Growth and progress brought about Inland's need for a headquarters building. It was only natural that the final design, worked out for Inland steelmen by architects, Skidmore, Owings and Merrill, should reflect that progress in its architecture, choice of materials and concept of construction.



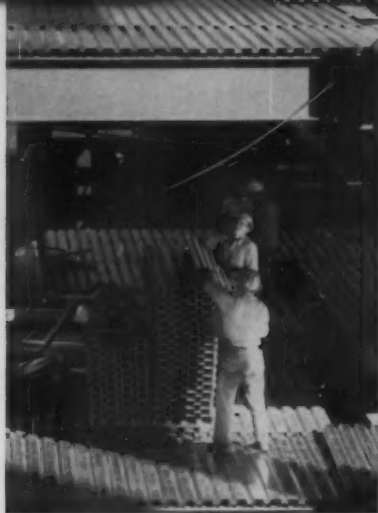
Chicago..Steel..and a new idea

Growing with the Midwest, the Inland Steel Family of Companies Builds a Unique Home Office in Chicago

The new headquarters building of Inland Steel Company in Chicago's Loop is the only building of its kind in the world. It is steel from the top of the 25-story service tower to three levels below Dearborn and Monroe Streets. The architecture is bold—and different. So was the en-

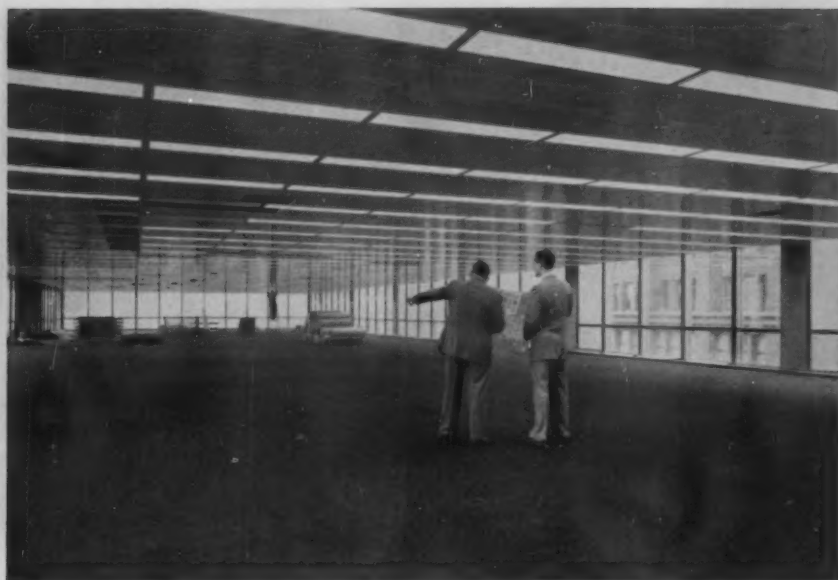
gineering necessary to erect it. Important contributions toward its construction were made by members of the Inland family . . . each one a steel specialist. The end result is an unusual building . . . a building in which no columns obstruct or interfere with interior space, in which

office planning and arrangement is completely unhampered. Sheathed in stainless steel and glass, with clean and simple lines, the Inland building has a "look of the future", symbolizing Inland's faith in steel and in a growing Chicago and Midwest.



Cellular steel sub-flooring carries utility services. ▲ Milcor Cellufloor®, 750 tons of it, supplied by Inland Steel Products Company, sheet metal manufacturing member of the Inland family, helps make possible an uncluttered interior. All utilities, power and light, communication lines, hot and cold air are distributed through the cells in this steel sub-flooring made of Inland TI-CO® galvanized sheets.

A unique example of welded construction. The main load-bearing girders that span the 60-foot width of the building are welded to the fourteen vertical columns. The girders and columns were made up from angles, beams and plates using submerged arc welding in the Joseph T. Ryerson Chicago plant. Shown here, a two-story section of one of the supporting columns is hoisted into place. Inland Hi-Bond® reinforcing bars for concrete walls and basement slabs were also fabricated by Ryerson, steel distributing member of the Inland family. ▼



▲ Widest clear span multi-story building. The Inland Steel Building is literally turned inside out. The supporting vertical columns are on the exterior leaving the inside completely unencumbered. This new design concept, plus the removal of all elevators, stairs, washrooms and other vertical risers to an adjoining service tower, means a completely flexible, open office area in the main building.

Curtain walls of stainless steel. One of the lightest, thinnest curtain walls ever used, made of 16 gage, flat stainless steel panels bonded to 2 inches of concrete fireproofing, helped to save 200 tons of structural steel in the Inland building. Ryerson supplied the stainless steel (over 400 tons) and the technical assistance on its fabrication. The main building's exterior surface is 70% solar-tinted, double-pane glass and 30% glistening stainless steel. ▼



INLAND STEEL

30 W. Monroe St., Chicago 3, Ill.

INLAND STEEL COMPANY—producer of basic open hearth sheets, plates, bars, structural shapes, tin plate, rails and coal chemicals.

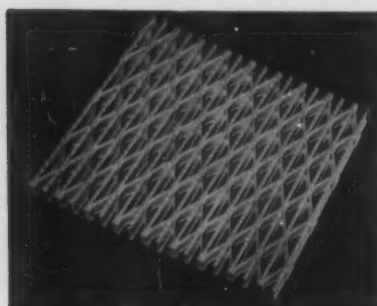
JOSEPH T. RYERSON & SON, INC.—the nation's largest supplier of steel from stock—with 18 plants serving the major industrial areas.

INLAND STEEL PRODUCTS COMPANY—manufacturer of Milcor Cellufloor® and a broad line of other steel products for the building industry.

INLAND STEEL CONTAINER COMPANY—manufacturer of carbon steel and stainless steel shipping drums and pails.

INLAND LIME & STONE COMPANY—producer of high purity limestone for steel-making, construction, agriculture and paper making.

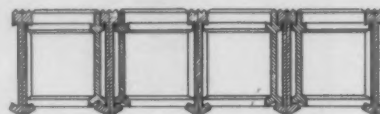
Product Reports



Roll-Locked Aluminum Grating

A unique roll-locking process replaces conventional joining methods in the manufacture of a new aluminum grating designed by Pittsburgh engineering designer G. G. Greulich. As shown right, its bearing bars and crimped secondary bars are joined by interlocking their surfaces into a solid, one-piece rattle-proof unit sans bolts, screws, rivets or welds. The *Roll-Lock* grating, which will be available in sun-fast colors as well as in the standard aluminum

finish, is expected to find wide architectural use as grills, sunshades, wall panels, decorative spandrels and column facings in addition to such workaday applications as flooring and stair treads. *Kerrigan Iron Works, Nashville, Tenn.*



Perma Products Changes Name

Effective January 1, 1958, the Perma Products Company became the Shakertown Corporation, adopting as its corporation name the "Shakertown" trade mark which identifies its products. *Shakertown Corporation, 20310 Kinsman Rd., Cleveland, 22, Ohio.*



Portable Conveyor and Stacker

Primarily designed for efficient loading and unloading of box cars and highway trucks, the push-button controlled, electrically-powered *Flex-Bend* portable conveyor and stacker also provides advantages for many warehousing and manufacturing applications. Its ability to bend horizontally in either direction makes it useful for mechanically carrying material around stationary objects; and, because it is easily moved from one location to another, it can also be frequently used for a variety of short run handling assignments. Standard unit components of the *Flex-Bend* conveyor and stacker are a power stacker car, a belt drive car, a power traveler car, and as many center conveyor cars as are needed to meet the overall length requirements of individual applications. The combination of powered forward and reverse travel, conveyORIZED movement of materials, push-button controlled up and down movement of the stacker, and easy horizontal bending of the conveyor (down to a radius of 5 ft) provides for easy mechanical handling and stacking of materials in many otherwise difficult manual handling situations. *Jervis B. Webb Co., 8951 Alpine Ave., Detroit 4, Mich.*



... a NEW kind of modern
fire protection

Modularm is a completely new fire alarm system of building block design. The building blocks are compact, modular units called Alarm Initiating Panels, Alarm Signal Panels, and Power Panels—all standardized and designed for economy. Combined, they produce any of these wide variety of UL-approved systems:

Manual, automatic, and/or pre-signal non-coded systems.

Manual or automatic common-code or zonal code systems.

Manual or automatic selective-code, selective-code continuous-alarm after code, or selective-code pre-signal systems.

Modularm has these additional features—

Provisions for automatic alarm connection to municipal fire stations.

Dead-front design of control panel isolates high voltage, permitting installation anywhere.

Single or double supervised power supply.

Auxiliary test switches—pilot lamps.

Automatic fire detection for non-supervised areas.

Integrated design, easy installation and superior performance make *Modularm* the most modern and complete fire alarm system available today. Write for Couch's *Modularm* Brochure #131.

Simplified Systems of Communication

S. H. COUCH COMPANY, INC.,
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**California
redwood
at home
in Florida...**



Residence, Miami Beach, Florida Nims & Browne, Associated Architects

Ezra Stoller Photo

North, south, east, west... the natural beauty of California redwood enhances fine homes, while the ingrown durability of its heartwood assures resistance to decay. For architectural use, be sure to specify "CRA-Certified Kiln Dry."



CALIFORNIA REDWOOD ASSOCIATION • 576 SACRAMENTO STREET • SAN FRANCISCO 11

Fesco Board® is part of the new




For Fire Resistance: New Materials with a "Forward Look"

This new 34-acre Chrysler roof deck brings together the most modern materials to establish a new level of fire-resistance and fire-containment. Specifications: Walcon steel deck, Koroseal vapor barrier and non-flammable Lexsuko cold adhesive R907T—(manufactured for Lexsuko, Inc., Cleveland, by B. F. Goodrich), Schundler's Fesco Board Roof Deck Insulation, and Koppers 4-ply tar and gravel built-up roof.


ARCHITECT and ENGINEER: F. A. Fairbrother and George H. Miehl with Albert Kahn ASSOCIATED ARCHITECTS and ENGINEERS, CONSULTANTS, Detroit. GENERAL CONTRACTOR: Hunkin-Conkey Construction Company, Cleveland. ROOFING CONTRACTOR: Industrial Roofing and Sheet Metal, Inc., Cleveland. LEXSUKO ROOF construction engineered and distributed by Lexsuko, Inc., Cleveland.

**Non-flammable Lexsuko adhesive R907T

*TM B. F. Goodrich Co.



"Forward Look" in roof design



In every way, Fesco Board lent itself to a new concept in fire retardant roof design employed on the 34 acre roof of Chrysler's Twinsburg, Ohio body stamping plant. Teamed up with Lexsuco's non-flammable adhesive, and the modern vapor barrier, Koroseal*, Fesco Board contributed these important properties:

Incombustibility — Fesco Board is rated incombustible, with a flame spread of only 20.5, and a smoke contribution factor of 0.

Moisture Resistance — Fesco Board absorbs only 1.5% moisture by volume on 24 hours total immersion.

Permanence — Fesco Board is not subject to rot, fungus or decay.

Mechanization — With a compression factor of 174.8, rigid Fesco Board holds up under heavy traffic, is packaged for mechanized handling.

Workmanship — Light, only 9 oz. PBF, and 24" x 36" sized, Fesco Board handles fast. Protective packaging, true-square corners, and dimensional stability assure good craftsmanship.

Designing for greater fire-resistance? You'll find Fesco Board at home with the newest materials, the newest highspeed application techniques, the newest concepts of fire-control. Write for engineering data.

F. E. SCHUNDLER & COMPANY, INC.

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RATED FIREPROOF MATERIALS, ACOUSTICAL & INSULATING
Developers and producers of incombustible mineral products including Ebbstone Acoustical Tile, Fesco Insulation Board, Coralux Acoustical Plaster, Coralux Perlite Aggregates, Mica Pellet Vermiculite, High Temperature Insulating Blocks and Insulating Cement.

TAR & GRAVEL

FESCO
INSULATION
BOARD

NON-FLAM. ADHESIVE**

KOROSEAL BARRIER*

NON-FLAM. ADHESIVE**

STEEL

DECK



Office Literature

continued from page 186

How to Design Pole-Type Buildings

Technical manual gives correct design procedures for proportioning structural members of pole-type buildings of all sizes, kinds and uses. Typical examples are described and illustrated with line drawings showing construction details. 68 pp., 5¼ by 8¼ in. \$1.50. *American Wood Preservers Institute, 111 W. Washington St., Chicago 2, Ill.*

The Balanced Door (A.I.A. 16-A-1)

Presents photographs of typical installations of Ellison *Balanced Doors*, with specifications and details. 12 pp. *Ellison Bronze Co., Inc., Jamestown, N. Y.**

Directo-Lens (A.I.A. 31-F-23)

Four-page bulletin and six photometric data sheets detail the new Phoenix *Directo-Lens* line of prismatic glass lenses for high-intensity, low-brightness controlled illumination. *The Phoenix Glass Co., Monaca, Pa.**

Flex-A-Power Plug-in Busway

Bulletin GEA-6172 lists features, application data, ratings, construction information, dimensions, weights, installation instructions and guide-form specifications for new 100 amp, plug-in *Flex-A-Power* busway. 12pp. *Advertising and Sales Promotion, Distribution Assemblies Dept., General Electric Co., Plainville, Conn.**

Centrifugal Fans (A.I.A. 30-D-1)

Bulletin 257 describes, illustrates and gives complete engineering data on Ilg *BC Airfoil* centrifugal fans for all types of ventilating and air conditioning installations. 32 pp. *Ilg Electric Ventilating Co., 2850 N. Pulaski Rd., Chicago 41, Ill.**

Lightsteel Structural Sections

(A.I.A. 13-G) General catalog includes tables giving physical and structural properties, dimensions and uniform loads for light steel structural sections, including joists, studs, zee sections, channels, channel studs, track and bridging. 24 pp. *Penn Metal Co., Inc., 40 Central St., Boston, Mass.**

Steel Chalkboard (A.I.A. 35-B-1)

Revised specifications sheet includes methods of installation, types of *Korok* steel chalkboard, and standard and special sizes and colors. 8 pp. *Korok Div., The Enamel Products Co., 341 Eddy Rd., Cleveland 8, Ohio**

Metal Grating Handbook (A.I.A. 14-A-1)

Contains informative text, schematic drawings, tables, and installation photographs, as well as complete standards and specifications for metal grating and trends. A glossary of terms and definitions used in the metal grating industry is also included. 32 pp. \$1. *Metal Grating Institute, Inc., One Gateway Center, Pittsburgh 22, Pa.*

People Who Care

... *About People Who Eat* explains the services of the food service consultant—who he is, what he does, how he works, how much he costs, why he is needed. 12 pp., Ill. *Integrated Design Associates, 400 S. Beverly Dr., Beverly Hills, Calif.*

Underwater Lighting

Bulletin 2638 describes two principal types of underwater floodlights for swimming pool lighting, with diagrams and dimensions of both types. *Crouse-Hinds Co., Wolf & Seventh North Sts., Syracuse, N. Y.*

*Additional product information in *Sweet's Architectural File, 1958*

more literature on page 232

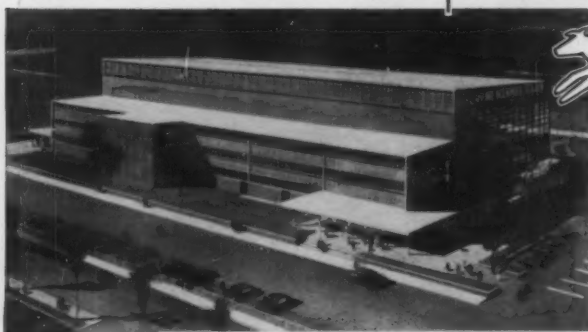
In Miami it's Halsey Taylor

Supervising Architects: Parmelee & Whiddon, Miami

Design Eng'rs & Arch'ts: Freeland & Bird, San Diego, Calif.

Gen'l Cont.: Edw. M. Fleming Co., Inc.

Plumbing Contractor: F. H. Inscho



Fountains, as shown as well as coolers, were specified



Porcelain top coolers, shown, were specified



Architects:

Steward-Skinner Associates, Miami

Contractor:

Alex. Orr & Associates, Miami

Here, in America's year-around playground, Halsey Taylor drinking-water fixtures are the popular favorites of architects, contractors and building owners. Not only is this true of the structures shown, but of many of the area's hotels, and in schools throughout the state.

fountains • coolers by **Halsey Taylor**

The Halsey W. Taylor Co., Warren, O.

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Why hospitals find
Sarcotherm Systems ideal.



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2. *Dependability* — because of simplicity, no complicated mechanisms. Only a few simple, rugged instruments. Minimum of wiring and piping. Self-powered mixing valves require no electricity or compressed air. Result: uninterrupted heating comfort, long service life.
3. *Ease of temperature setting* — regular hospital maintenance men quickly, easily make adjustments.
4. *Practically no maintenance* — rugged construction and few parts insure long trouble-free operation. Self-powered thermostatic system embodies performance stability developed through half a century of Sarco experience.

SOME TYPICAL HOSPITALS EQUIPPED WITH SARCOTHERM SYSTEMS

		Number of Zones
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Children's Hospital	Washington, D. C.	5
Community Hospital	Cumberland, Wisc.	4
Copiah County Hospital	Hazlehurst, Miss.	3
Delaware State Hospital	Farmhurst, Del.	11
Embreeville State Hospital	Embreeville, Pa.	53
Freeport Hospital	Freeport, L. I.	4
New Leake County Hospital	Carthage, Miss.	5
North Carolina State Hospital	Goldsboro, N. C.	4
Milledgeville State Hospital	Milledgeville, Ga.	13
Rabun County Hospital & Health Center	Clayton, Ga.	5
Rowan County Medical Center	Salisbury, N. C.	5
Springfield State Hospital	Syskeville, Md.	5
V. A. Hospital	Clarksburg, W. Va.	4
Woodville State Hospital	Woodville, Pa.	18
York County Home	York, Pa.	13

FOR COMPLETE CONTROL SYSTEM CATALOG, write Sarcotherm Controls, Inc., 635 Madison Ave., New York 22, N. Y.

Why architects, engineers,
contractors find
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1. *Application engineering* — Sarcotherm engineers, backed by years of experience in hospital heating control systems, assist consulting engineers with individualized system diagrams.
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3. *On-the-job assistance* — to contractors, from Sarcotherm's field engineers.
4. *Low installed cost* — because of simplicity; minimum of wiring and piping.
5. *Undivided responsibility* — complete control system plus heating specialties and accessories from one dependable source — Sarcotherm.



Hempstead General Hospital, Hempstead, L. I., N. Y.

One of the recently completed hospitals equipped with a Sarcotherm Weather-Compensated Control System for hot water heating. Installation includes 5" Sarcotherm 3-way modulating mixing valve, programmed timer, radiator valves, balancing fittings, automatic air vents and other heating specialties.

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Heating Contractor — Seaboard Installations, Inc., New York City.

4016-B

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and Buyers...Architectural Record's Third Annual All-House Issue of **1958** featuring ...

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houses of the year*

house design

A six-page presentation of each house will demonstrate in pictures (many in full color), plans, drawings and text ...

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2. over-all spatial organization
3. one especially noteworthy aspect of the house design—be it the quality of the finishes, a bathroom or kitchen, an electrical or mechanical system.

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The Future and The House—a timely and stimulating study by the editors of Architectural Record of house design problems and trends imposed by rapidly increasing land scarcities and population densities in many communities—with emphasis on the positive contributions architects of custom houses are now making toward more congenial and unified neighborhoods and toward influencing developers and builders.

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119 WEST 40TH STREET, NEW YORK 18, NEW YORK

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the active
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engineer"

Office Literature

Incinerator Manual

Detailed instructions on the installation, operation and maintenance of domestic gas-fired incinerators, gas piping, flues and vents. 12 pp. 15¢. *Gas Appliance Mfgs Assoc., 60 East 42nd St., New York 17, N. Y.*

Fluorescent Luminaires (A.I.A. 31-F-2)

Photometric data for Gotham Series 83 and 84 fluorescent luminaires. 8 pp.

Gotham Lighting Corp., 73-01 Thirty-First St., Long Island City, N. Y.

Expansion Joint Manual

Design Practices and Uses of Pre-moulded Joints in Concrete Pavements include comprehensive technical data, illustrations, application and installation information on pre-moulded expansion joints. *Expansion Joint Institute, 121 Hill Ave., Aurora, Ill.*

Design Concepts in Acoustical Ceilings

Portrays ten ceiling patterns that

may easily be made with fissured and striated mineral fiber acoustical ceiling tile. *Armstrong Cork Co. Lancaster, Pa.**

Curtain Wall, Veneer Construction

(A.I.A. 17-A) Includes sections on panel types, big-panel construction and curtain wall remodeling; typical construction details; and specifications for curtain wall and veneer panels of architectural porcelain enamel on steel and aluminum. 8 pp. *Ingram-Richardson Mfg. Co., Beaver Falls, Pa.**

All Aluminum Sliding Glass Doors

Provides complete drawings and technical details for complete line of Ador sliding glass doors, including the *Thermo Door* for one inch dual glazing and the budget-priced *Zdor*. 16 pp. *Ador Sales, Inc., 2345 W. Commonwealth Ave., Fullerton, Calif.**

Aluminum and Fiberglass Skylights

(A.I.A. 12-J) Incorporates detailed information, drawings and specifications for complete line of *Marco-lite* aluminum and fiber glass skylight products. Descriptions of major installations are also included. 12 pp. *The Marco Company, 45 Greenwood Ave., East Orange, N. J.**

Unitary Air-Conditioning Standard

Standard 210-57, a new standard for unitary air-conditioning equipment, applies to factory-made residential, commercial and industrial air conditioners or matched assemblies as defined in the standard, and includes performance and safety standards and methods of rating and testing. 35¢ *Air-Conditioning and Refrigeration Institute, 1346 Connecticut Ave., N. W., Washington 6, D. C.*

Fuel Oil Heaters

Bulletin 743 describes and illustrates complete line of fuel oil heaters, with each type detailed in tables of capacities, dimensions and weights. Installation procedures are also covered. 20 pp. *Manning & Lewis Engineering Co., Dept. P, 28-42 Ogden St., Newark, N. J.*

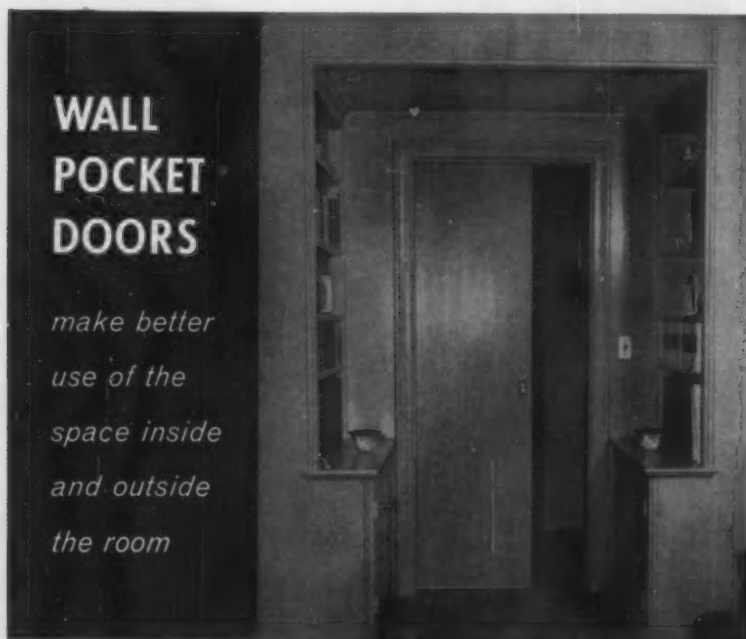
Lighting Fixture Catalog

Illustrates and describes advance items from new line of residential and commercial lighting fixtures. Complete specifications are included. *Markstone Mfg. Co., 1531 N. Kingsbury St., Chicago 22, Ill.*

Wiring Devices (A.I.A. 31-C-7)

Catalog 60 presents complete line of electrical wiring devices in handy, indexed pocket size booklet. 80 pp. *Dept. SD-8, Pass & Seymour, Inc., Solvay Station, Syracuse 9, N. Y.**

**Additional product information in Sweet's Architectural File, 1958*



Pocket Door T-Frame



Write for complete details of the Sterling Pocket Door T-Frame ... modern structural hardware for modern buildings.

This *all-steel* Pocket Door T-Frame makes the wall rigid and warp-proof ... provides the simplest and lowest-cost pocket door installation. It enables you to plan a door where it really belongs ... *in the wall when not in use!* Not only will many square feet of space be saved, but doorways can be made as wide as desired without cramping quarters.

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**NEO-RAY LOUVRED
CEILING**



GOES TO COLLEGE*



*DINING ROOM CEILING AT SUZANNA HALL, ALBION COLLEGE, ALBION, MICH.

* Here's beauty and efficiency combined in an unusual application for NEO-RAY LOUVRED CEILINGS: It's a college dining room with a sky-lite. The glass in the sky-lite is stippled with green to allow a very light green color to come through and reflect on the white louvres. After the sun has gone down, pink lamps are lit to give a completely different color scheme.

Yes — there's no limit to the interesting lighting combinations you can create with NEO-RAY LOUVRED CEILINGS.

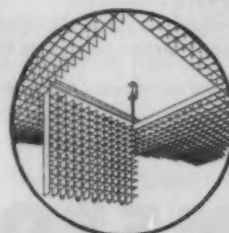
ARCHITECT:
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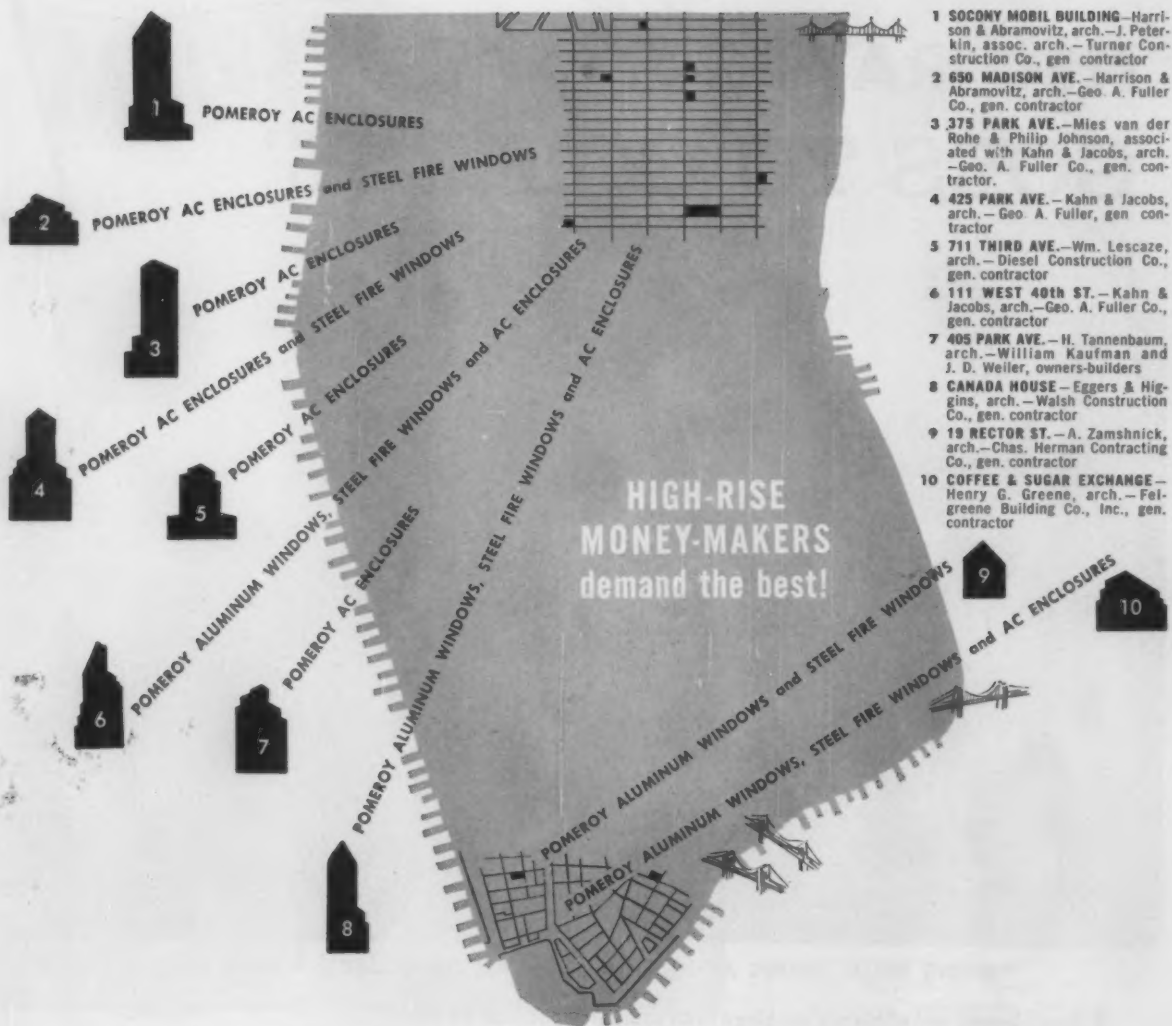
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- 3 375 PARK AVE.—Mies van der Rohe & Philip Johnson, associated with Kahn & Jacobs, arch.—Geo. A. Fuller Co., gen. contractor
- 4 425 PARK AVE.—Kahn & Jacobs, arch.—Geo. A. Fuller, gen. contractor
- 5 711 THIRD AVE.—Wm. Lescaze, arch.—Diesel Construction Co., gen. contractor
- 6 111 WEST 40th ST.—Kahn & Jacobs, arch.—Geo. A. Fuller Co., gen. contractor
- 7 405 PARK AVE.—H. Tannenbaum, arch.—William Kaufman and J. D. Weiler, owners-builders
- 8 CANADA HOUSE—Eggers & Higgins, arch.—Walsh Construction Co., gen. contractor
- 9 19 RECTOR ST.—A. Zamshnick, arch.—Chas. Herman Contracting Co., gen. contractor
- 10 COFFEE & SUGAR EXCHANGE—Henry G. Greene, arch.—Feigene Building Co., inc., gen. contractor

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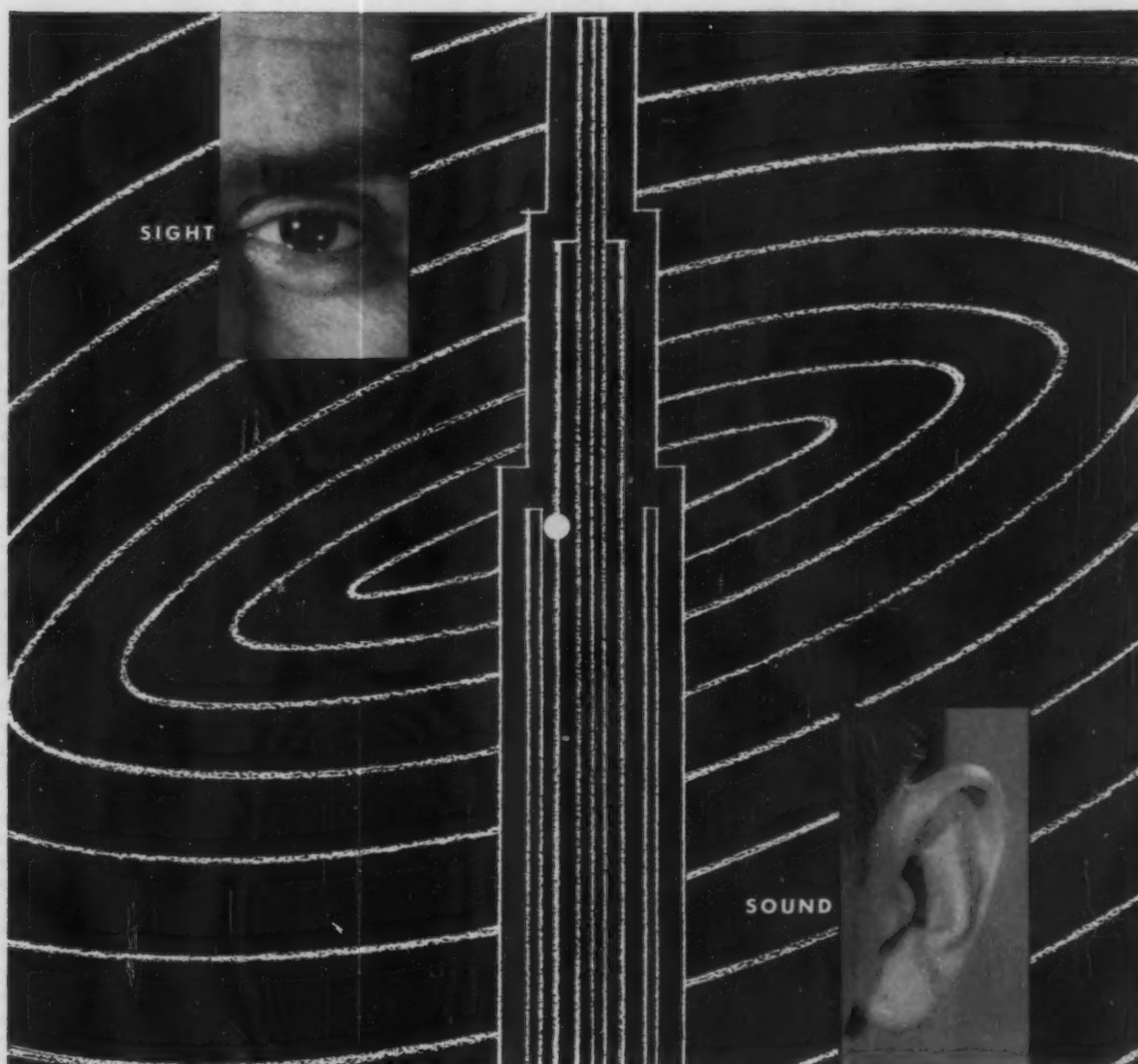
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OF VISUAL AND AUDIBLE SIGNALS

ADRIAN, MICHIGAN

The Record Reports

continued from page 28

SOLUTIONS IN SPACE...

In the heart of
Manhattan...

18 Fairhurst Folding Walls
save precious space in the
new Socony-Mobil Building



Fairhurst® Unitfold & Unitslide FOLDING WALLS



Top: Unitfold Wall in Socony-Mobil offices is concealed in pockets when not in use. J. Gordon Carr, Arch. Bottom: 2 movable walls at the 1st Nat'l City Bank permit 4 room combinations in a long, narrow area. Shreve, Lamb & Harmon, Archs.

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housing characteristics survey conducted by the Bureau of Labor Statistics and paid for by the manufacturers.

A month ago, the marketing research committee had under consideration a material survey in the non-residential field, one in the alterations and repair field, a marketing report from local chapters (there are 42), an architects' preference study, sales reports from members, and cooperation with government agencies in the development of Federal statistical programs.

Cooperative promotional activities also include the organization's exhibitions such as the Caravan of Building Products which toured the nation for three years. A similar display was planned on a large barge which would tour the East coast and the inland waterways and would be known as P.C.'s "Waterama." Plans for a 1958 tour of this nature have been canceled, but the Waterama project is still being considered for 1959.

P.C.'s merchandising catalogs for builders, award of merit programs and ideas for home builders competition are other "cooperative promotion" activities.

In the category of cooperative activities with architects fall the widely known building products literature competition sponsored annually in cooperation with the A.I.A., chapter informational programs and the new technical seminars launched last fall with curtain walls as the first subject. Twenty-six such seminars have been scheduled through 1958. Spokesmen said the Council presently is expanding its activities with the architects.

Joint committees are maintained with A.I.A., N.A.H.B., the Consulting Engineers Council and Construction Specifications Institute; and "stand-by" joint committees are in existence with the Associated General Contractors of America, Inc., and the National Retail Lumber Dealers' Association.

The P.C. has been one of the prime movers in the effort to establish a permanent modular measure organization. This is now developing with the formation last summer of the Modular Building Standards Association.

John Haynes is the Council's managing director and the current president is Fred M. Hauserman.

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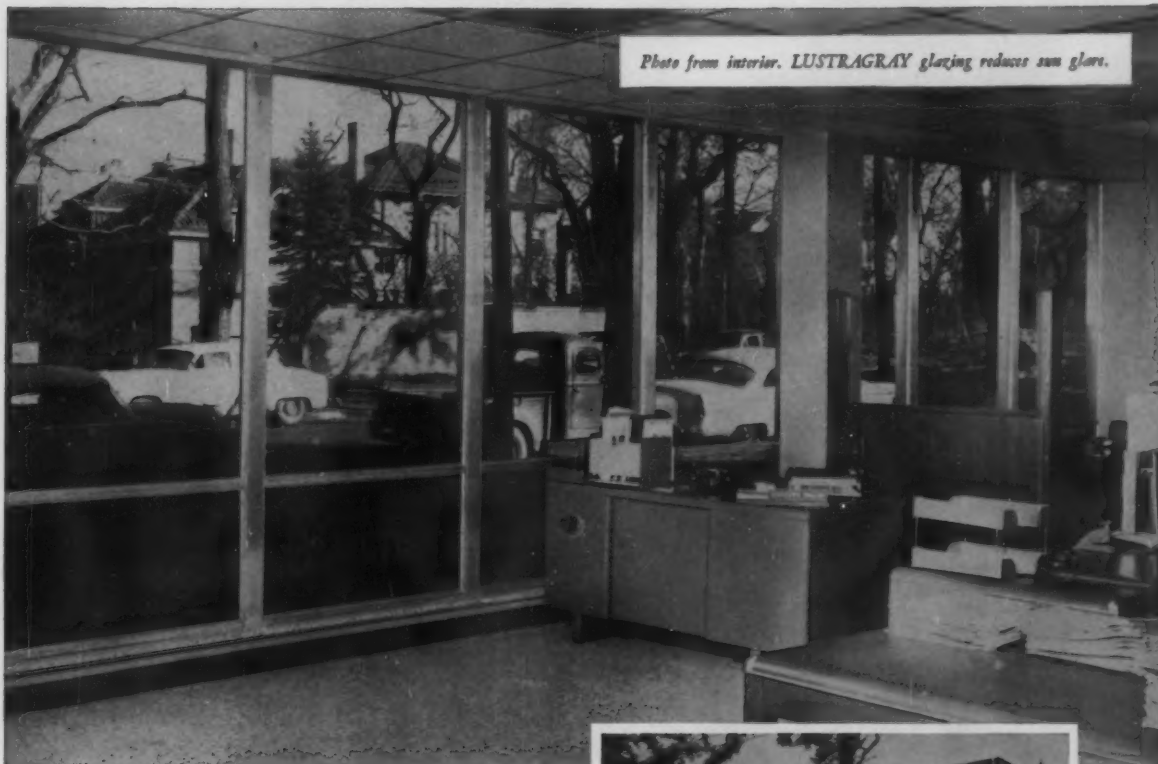


Photo from interior. LUSTRAGRAY glazing reduces sun glare.

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Photo from exterior. LUSTRAGRAY glazing enhances appearance of new office building of Aetna Life Insurance Co., Denver, Colo. Architect: Thomas J. Moore. Glazier: Gump Glass Co.

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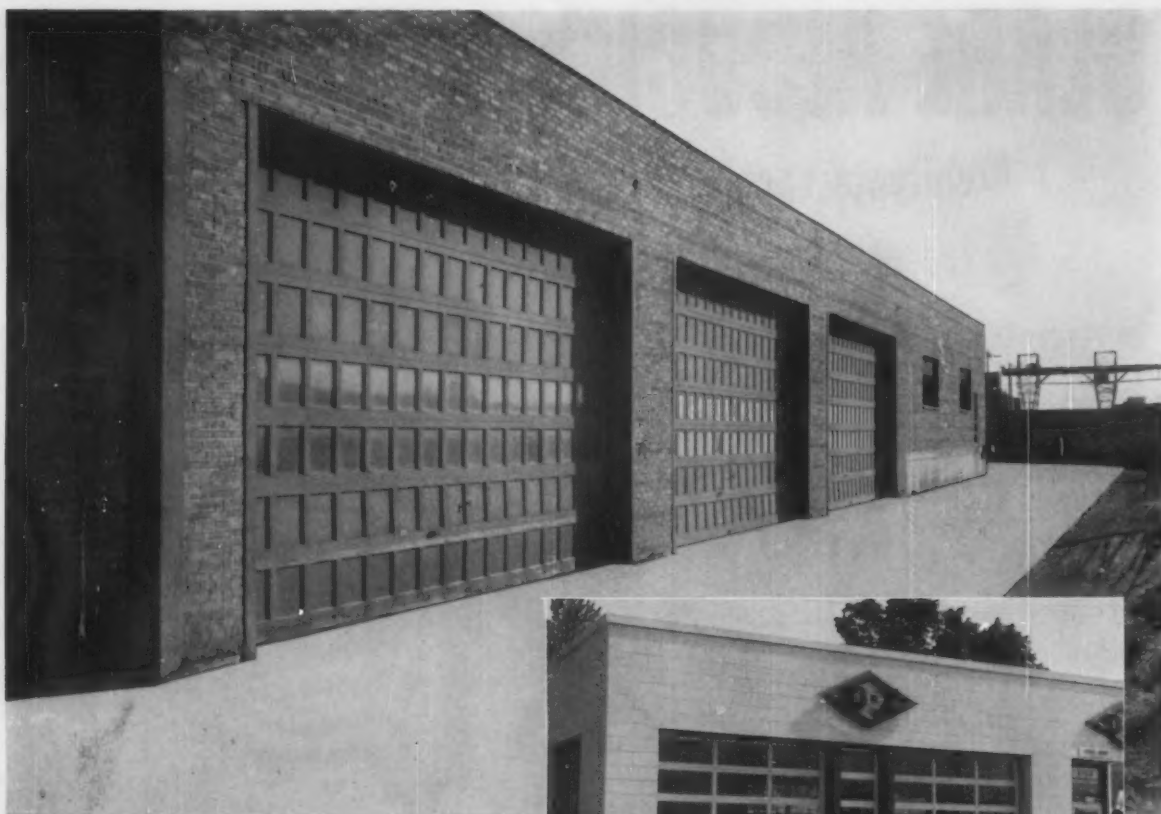


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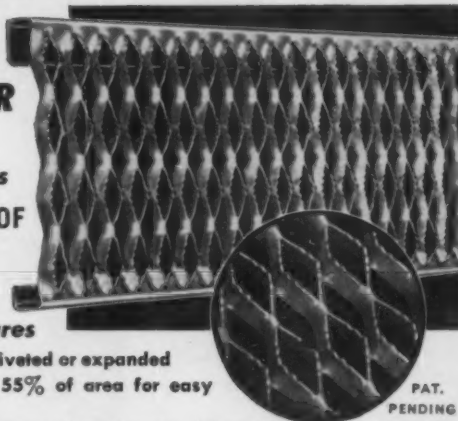
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On the Calendar

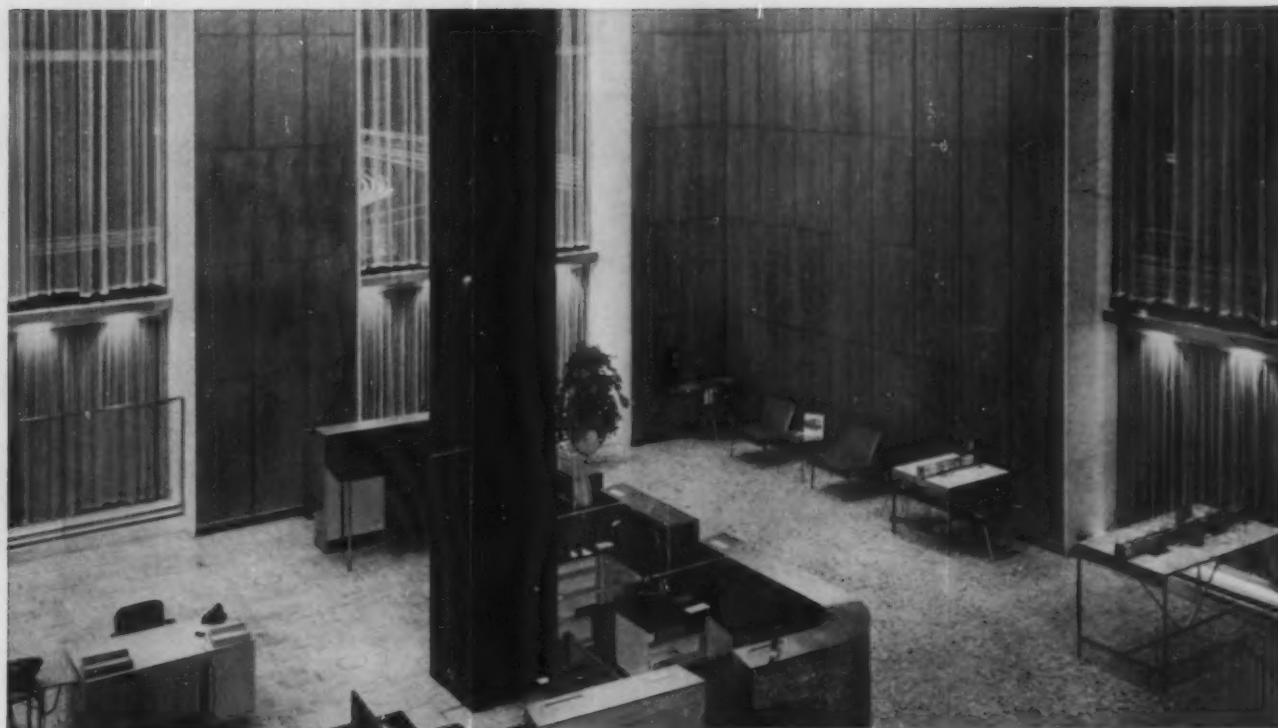
January

- 3-4 Meeting of Executive Committee, Board of Directors, American Institute of Architects—The Octagon, Washington, D. C.
- 19-23 Annual convention and exposition, National Association of Home Builders—Conrad Hilton and Sherman hotels and Coliseum, Chicago
- 27-29 Annual meeting, American Society of Heating and Air-Conditioning Engineers—Pittsburgh
- 27-29 Home Improvement Products Show—Hotel Sherman, Chicago
- 27-30 Plant Maintenance and Engineering Show—Chicago
- 30 Annual meeting, Society of Architectural Historians and College Art Association; through February 2—Washington, D. C.

February

- 4-6 13th annual technical and management conference, Reinforced Plastics Division, Society of the Plastics Industry Inc.—Edgewater Beach Hotel, Chicago
- 9-12 Eighth annual convention, Mason Contractors Association of America—Sheraton Park Hotel, Washington D. C.
- 11-12 Meeting of Building Research Advisory Board (invitation session) to focus on building industry problems and long-range solutions—National Academy of Sciences-National Research Council Building, Washington, D. C.
- 18-20 Conference on Church Building, sponsored by the Department of Church Building, National Council of Churches, and the Church Architectural Guild of America, in cooperation with the Detroit Council of Churches—Veterans Memorial Building, Detroit
- 22-26 Regional convention of the American Association of School Administrators—St. Louis
- 24-27 Annual convention, American Concrete Institute—Morrison Hotel, Chicago

continued on page 244



Weldwood butternut paneling. Philadelphia National Bank. Architects: Harbeson, Hough, Livingston & Larson. Installed by A. Wilt and Sons.

How to create a favorable business climate with Weldwood real wood paneling

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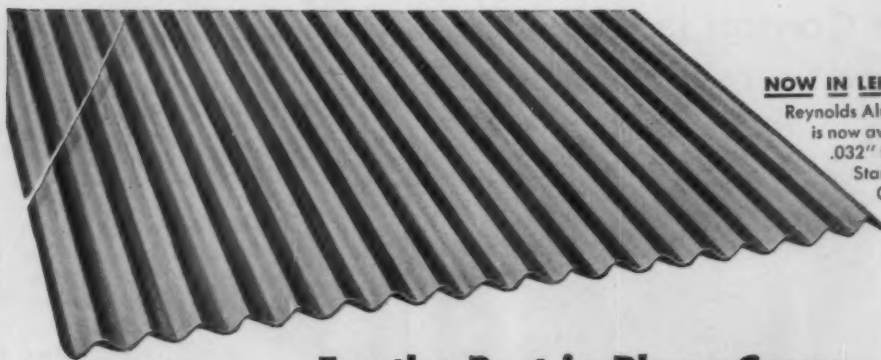
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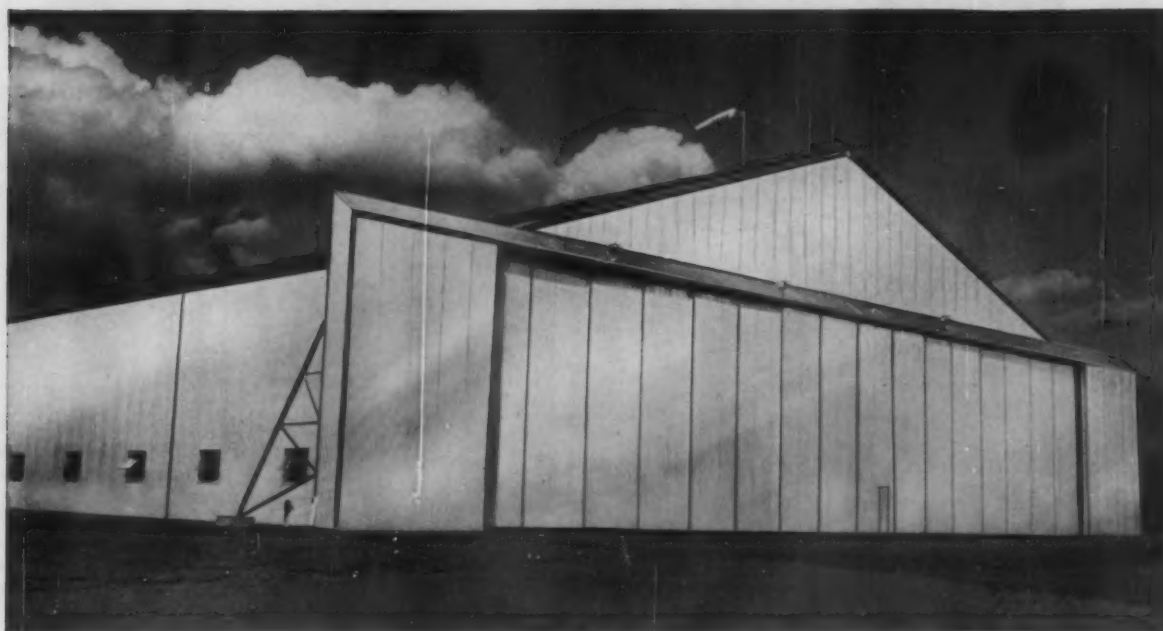
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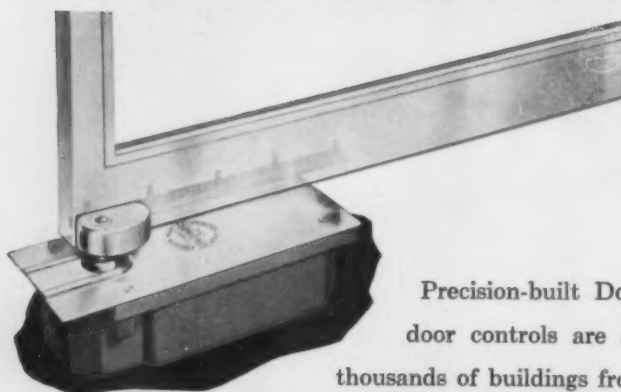
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26-28 National convention (first of three in 1958), American Society of Civil Engineers—New York City

March

8-12 Regional convention of the American Association of School Administrators—San Francisco

9-12 First National Lighting Exposition, sponsored by Lighting Lamps and Electrical Manufacturers Salesmen's Association—The Coliseum, New York

17-18 The Building Industry's Role in Urban Renewal; a joint conference sponsored by ACTION and the National Housing Center—National Housing Center, Washington, D. C.

17-21 Annual conference and exposition, National Association of Corrosion Engineers—San Francisco

29 Regional convention of the American Association of School Administrators—Cleveland

Office Notes

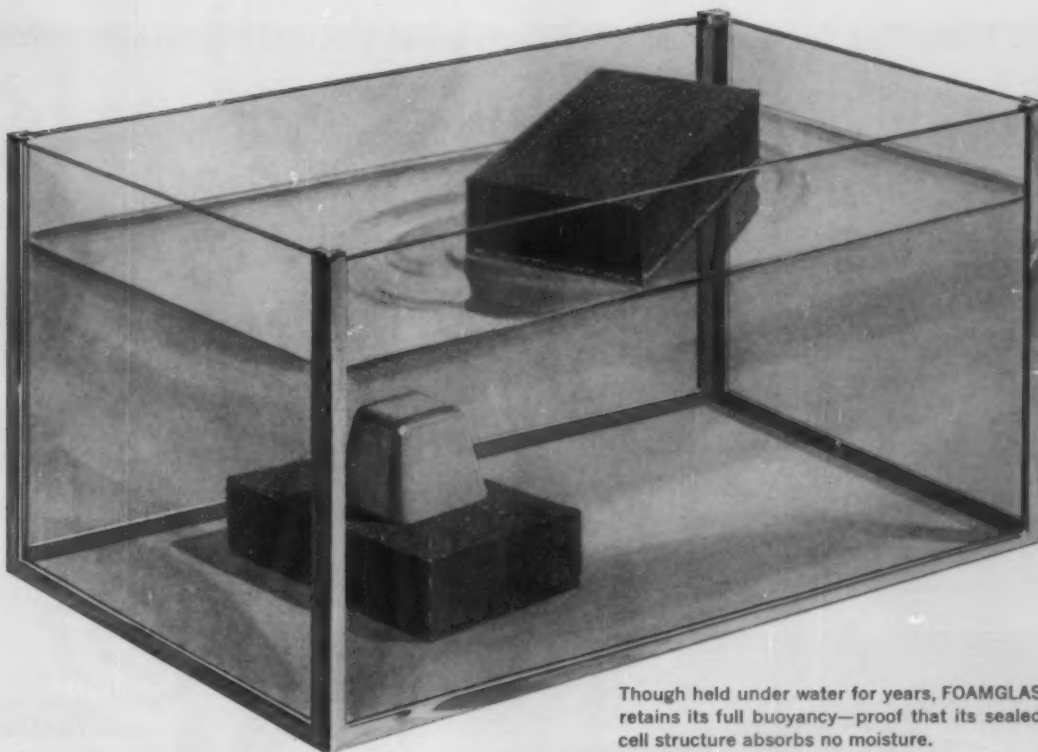
Offices Opened

The firm of Herbert L. Kartiganer, Consulting Engineers and Designers, announces the opening of an office at 75 Second Street, Newburgh, N. Y. The principal design staff of the firm consists of Herbert L. Kartiganer, professional engineer; Kenneth Goldfarb, architect; and Charles Bernstein, landscape architect.

Fred G. Owles Jr. announces the opening of his office for the general practice of architecture at 1401 Edgewater Drive, Orlando, Fla.

Frederick P. Wiedersum Associates, Architects, have opened their new offices in a building of their own design at 65 Roosevelt Avenue, Valley Stream, L. I., N. Y.; two offices formerly maintained in Valley Stream are consolidated in the new building. The firm will continue to maintain its offices in The Coliseum, New York, and Clifton, N. J. The firm has also announced appointment to its staff of Sanford H. Calhoun, who retired in June after 22 years as supervisory principal of the Mepharm Central High School District No. 3, L. I., N. Y.

continued on page 248



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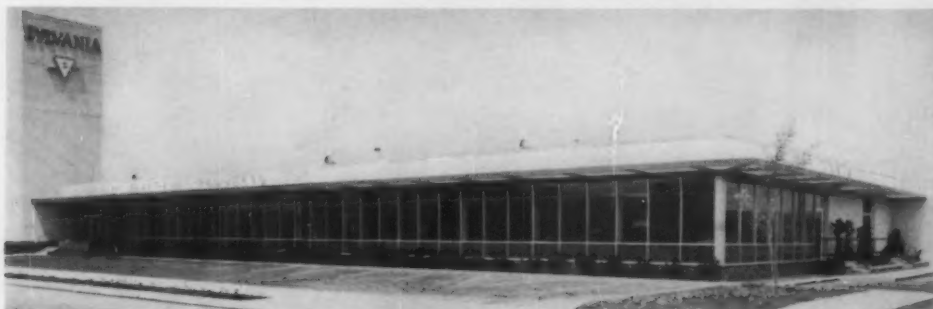
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R. H. Macy & Co., Roosevelt Field, L.I., N.Y. Architects: Skidmore, Owings, and Merrill; Consulting Engineers: Syska and Hennessy, Inc.; General Contractor: Turner Construction Co.; Mechanical Contractor: J. E. Schecter Corp.

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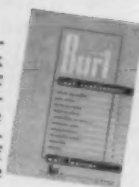
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Firm Changes

Harold S. Cassidy has announced that he will continue the practice of architecture at the same location as heretofore under the name of Harold S. Cassidy, 1961 West Market Street, Akron 13, Ohio. The partnership of Firestone & Cassidy has been dissolved by mutual consent as of October 1, 1957.

The appointment of Marvin J. Kudroff to the post of Director of Engineering for Daniel, Mann, Johnson & Mendenhall, Architects and Engineers, has been announced. Mr. Kudroff has been for ten years chief structural engineer for DMJM and has been project manager for many major projects.

DeYoung, Moscovitz & Rosenberg, Architects, have announced the appointment of the following associates: Louis H. Friedheim, Benjamin Markowitz, Irwin Safier and Leonard Scheer. The firm's offices are at 205 East 42nd Street, New York 17, N. Y.

Adolph Lancken Muller, president of Halsey, McCormack and Helmer Inc., Architects, 286 Fifth Avenue, New York 1, N. Y., has announced acquisition of full control of the firm from the survivors of his late partners. Mr. Muller has also announced that Arthur P. Simon will continue as vice president and that Paul Dobbs has been appointed secretary to replace William E. Brundage, who retired last month after 51 years in architecture.

Morris Lapidus, Leo Kornblath, Associate, announce the change of the firm name to Morris Lapidus, Kornblath, Harle & O'Mara, Architects, Engineers, Interior Designers. The firm has offices at 940 Lincoln Road, Miami Beach, and 256 East 49th Street, New York.

N. Jack Huddle, Architect, has been made an associate of the office of Robert A. Little and Associates, Architects, 1303 Prospect Avenue, Cleveland 15, Ohio. Mr. Huddle has been with the firm since 1955.

Stanley M. Smith, A.I.A., has joined the Palo Alto, Cal., office of Ernest J. Kump. Mr. Smith has been for the last six years working as an architect and planning consultant for the Arabian-American Oil Company and the Aramco Overseas Company in Rome, The Hague and Saudi Arabia.

Karl M. Waggoner, who has continued to operate the firm of Hansen

continued on page 252

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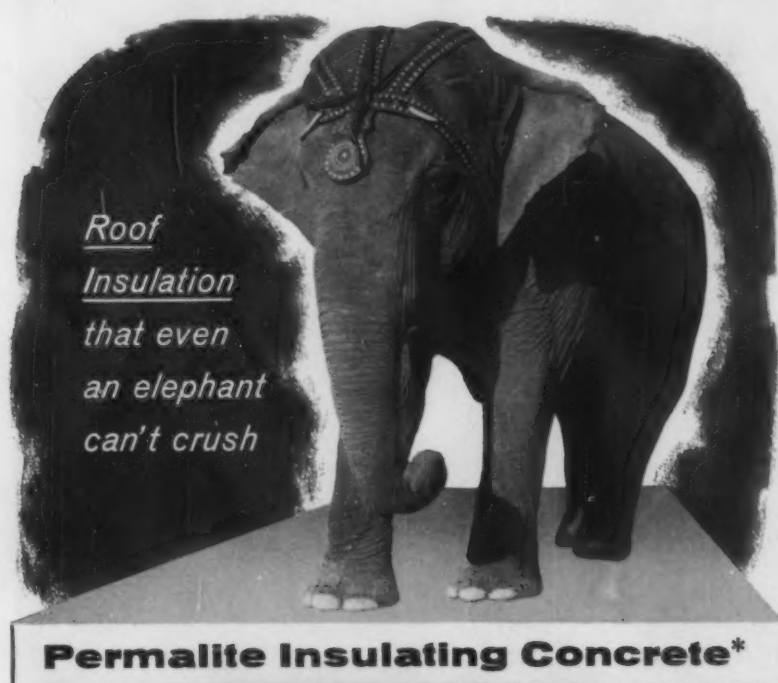
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CREDITS:

Pub Bar and Restaurant, Philadelphia. Architects: Armand Carroll and Wm. J. Stephenson. Mason contractors: Casper Bros.

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The Record Reports

continued from page 248

& Waggoner, Architects, since the death of Harry P. Hansen, and Thomas M. Waggoner, his son, announce the formation of a new partnership, Waggoner & Waggoner, Architects, 15 South Federal Avenue, Mason City, Iowa.

New Addresses

Charles N. Agree Inc., Architects, 14330 West McNichols, Detroit 35, Mich.

Cox and Forsythe, Architects, 1341 Market Avenue South, Canton 4, Ohio.

Lucian M. Dent, Architect, Room 209, 3340 Poplar, Memphis, Tenn.

Edward J. Kuntz, A.I.A., 121 Shippen Street, Weehawken, N. J.

Stuart M. Mertz, Landscape Architect, 8230 Forsythe Blvd., St. Louis 24, Mo. (Clayton)

Yamasaki, Leinweber and Associates, 1025 East Maple Road, Birmingham, Mich.

A Washington Report

continued from page 32

They would work within the framework limitations but could enforce their own decisions within precise limits. Subordinate planning levels within the District of Columbia would plan their own specific projects with criteria established by NCPC. Then, specific urban redevelopment projects and private and public building projects would proceed within limits set by all the preceding levels.

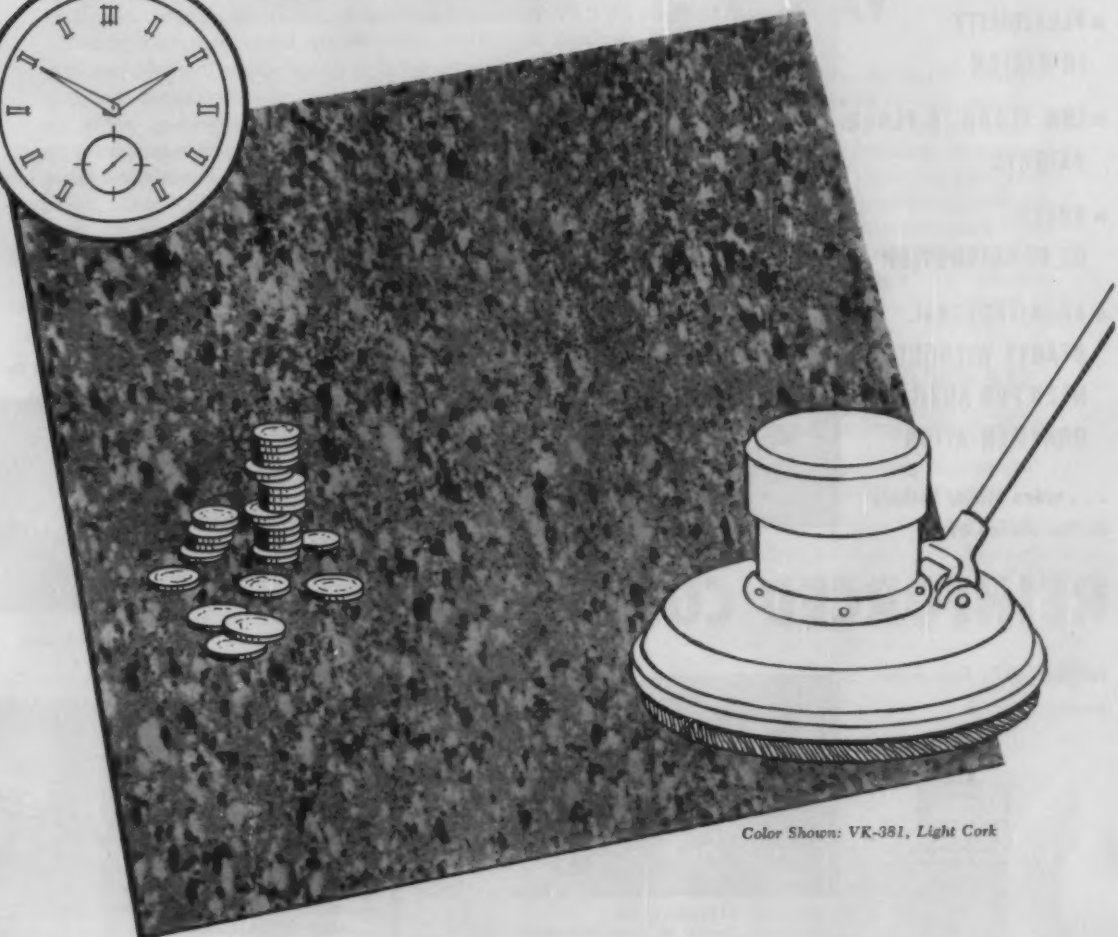
It is proposed that a diversity of planning methods within the various geographical jurisdictions permit useful experimentation. The key to the framework for planning is the proposed Federal City Corporation; its organization and its administrative personnel.

The report concludes: "Our present planning procedures are degenerating into mere obstructionism and our plans are without that quality which rises above statistical argumentation and creates an urge for genuine civic achievement."

Mr. Justement heads the A.I.A. Committee on the National Capital. Other members—Henry Shepley, John Harbison, Eero Saarinen and Edward Stone. This committee approved the report at its first meeting before the full board acted on it.



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ARCHITECTURAL RECORD January 1958 253

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Architects: James, Meadows & Howard, and
Abbott, Merkt & Company
General Contractor: Siegfried Construction Co.



MOHAWK PARKING RAMP
Architects: James, Meadows & Howard, and
Abbott, Merkt & Company
General Contractor: John W. Cowper Co., Inc.



EAGLE PARKING RAMP
Architects: James, Meadows & Howard, and
Abbott, Merkt & Company
General Contractor: John W. Cowper Co., Inc.

WIDE BAND FLOOR CONSTRUCTION, at Mohawk Ramp and Seneca Ramp, was necessitated by particular column arrangement.



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Even where provision is made for reaching the outside of a window from the inside, this usually is not desirable when a building is air-conditioned. Open windows quickly unbalance

an air-conditioning system, in warm weather and, of course, are undesirable in cold weather.

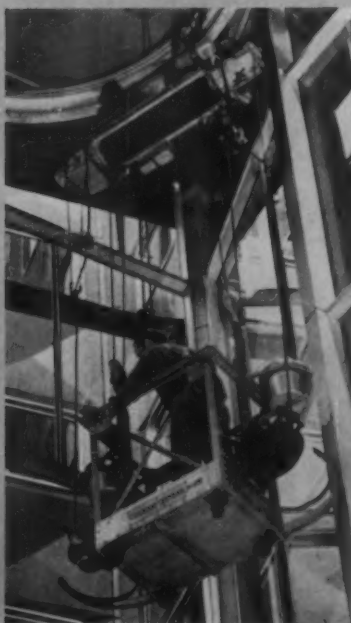
Cleveland Tramrail Window Washing Equipment offers a solution to the problem. It enables a man to reach every window quickly and wash them with complete safety. In addition, it facilitates other outside building maintenance such as pointing up, painting, minor repairs. The equipment is available for hand or electric operation.

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This modern glass-walled office lobby in the super-modern office building of Aluminum Company of America in downtown Pittsburgh is 4½ stories high. Cleveland Tramrail track circles the lobby both outside and inside. A motor-driven carrier and electric hoist is provided for each track loop. When a cage is attached to a carrier, a window washer can position himself at any part of a window by operating the simple hoist and travel controls.



Washing windows on the inside of the lobby. The same cage is used both outside and inside.

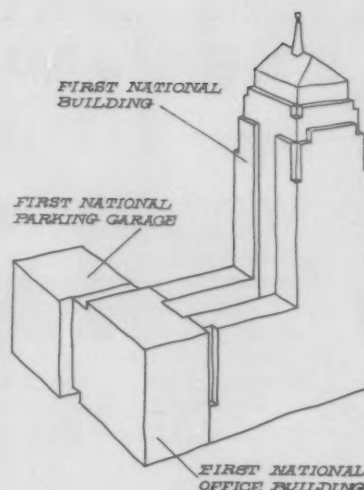
Downtown Bank Adds Garage With Drive-in Service

The First National Bank of Oklahoma City has provided for motoring customers in a 13-story extension which combines parking facilities for 465 cars and seven drive-in teller positions; the new building, on a site 125 x 140 ft, also includes 21,000 sq ft of office space, file rooms, an auditorium and a cafeteria. Sorey, Hill and Sorey were the architects, with Mack S. Martin Jr. of that of-

fice directing the project.

The building spans an alley to the rear and connects with a 14-story office building extension (now under construction) facing the street one block north, which in turn will connect with the existing 32-story First National Office Building. The main problems, the architect reports, were space and circulation requirements for the bank and garage—entirely independent operations. Building height was governed by the capacity

continued on page 258



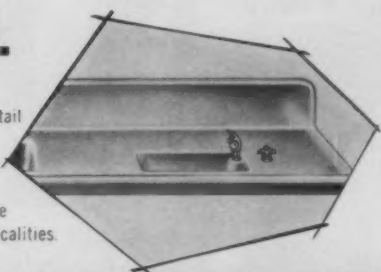
Drawing shows relationship of parking building to new office extension and existing 32-story bank. Below: exterior of parking building and views of basement level drive-in teller windows



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Daylight Research House, Ann Arbor, Michigan. Architect: Harris Armstrong, A. I. A., Kirkwood, Missouri. Decorator: Marian Quinlan, Chicago, Illinois



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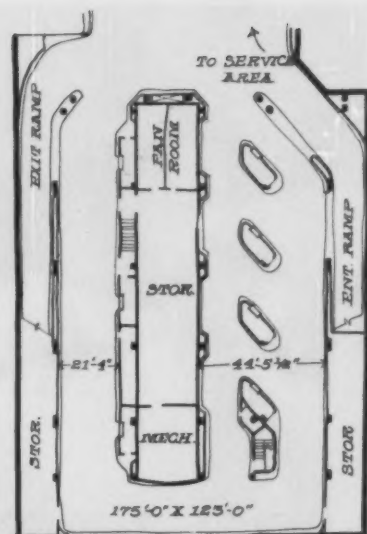
TEL. NO. _____

of the vertical transportation system.

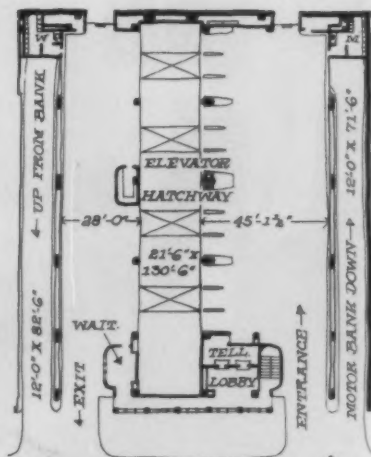
Access and egress were possible only from the front (see plans this page). Tellers' booths for drive-in banking service are located in basement; autos enter down approximately eight per cent slope from the east and circle around to any of the seven tellers' booths, exiting up a ramp on the west side to Main Street. Tellers' booths are serviced by pneumatic tube system. On the first floor is the elevator hatchway 21 ft 6

in. by 130 ft 6 in. servicing the four elevators used for parking automobiles on the 2nd through 12th floors.

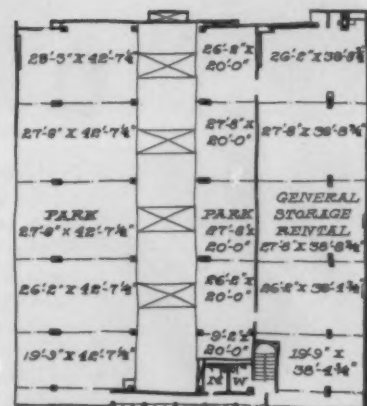
Structure is reinforced concrete throughout, substructure concrete piers to rock—approximately 50 ft. Cantilever of 13 ft on east and west property lines was to provide maximum space for entry and exit of automobiles. Exteriors are concrete, with yellow precast concrete aggregate and gold anodized aluminum panels on main facades.



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ciple to high rise construction.

The brick and clay tile producers, and members of their auxiliary organization of dealers and distributors, heard Harry C. Bates, president of the Bricklayers International Union, warn of the encroachment of "other materials" on the market, and say in connection with the panel development that he would use all the power of his union to see to it that union men set these panels wherever they might be used.

S.C.P.I. members in attendance were told that the new educational program of the Institute was about ready to go and would be launched in the nation's collegiate schools of architecture in a few months. The purpose of this is to bring more information on brick and clay tile products to architectural students.

New Program Aims at Students

C. T. Grimm, assistant director of S.C.P.I.'s engineering and technology

department, explained that the need for such a program had been well established through a survey of the schools. This revealed, he said, that 80 per cent of the schools responding (about half those in the country replied) said they spend less than nine hours on structural clay in their courses, and half said they spend less than six hours. Most of the schools are located where there has been no promotional effort. The Institute's engineering department now hopes to go into these schools with a detailed brick and tile message.

Harold Hauf, dean of the School of Architecture at Rensselaer Polytechnic Institute, heads an advisory committee on this program.

The survey also turned up the fact that 77 per cent of the schools' libraries are without *Brick and Tile Engineering* and that 60 per cent would like to have lecturers come into their classrooms from the industry. Lecturers are desired, too, for student chapters of the American Institute of Architects, Mr. Grimm said.

Actual work demonstrations will be provided and wall and panel samples will be furnished.

More than half the schools answering S.C.P.I.'s questions said they wished their students could tour an operating brick plant. There was an indication that very few architectural students now in the collegiate schools do tour such plants.

Field trips for students to demonstrate clay product performance in comparison with other materials will be a part of this program as will "modern masonry" seminars and the training of brick and clay tile product salesmen.

Architect Urges Better Specs

An architect addressing the delegates was Frank Crimp, A.I.A., of Adden, Parker, Clinch and Crimp, Boston, Mass., who spoke on what the specification writer expects from industry. His speech embodied a mild reprimand for lack of clarity in some of the printed standards from which the specification writer and the architect must work. He said he would like to see S.C.P.I.'s engineers prepare a number of simple specifications on several different products with each spec custom-written.

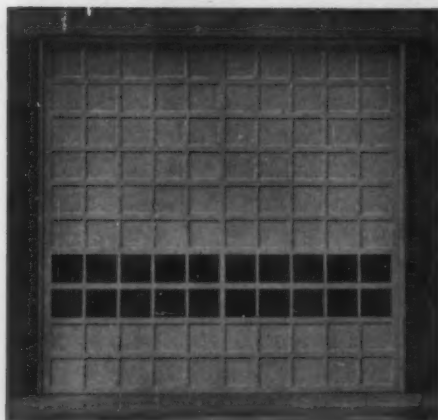
"In writing specifications bear in mind that I (the architect) want a file reference which I can use, as nearly as possible, the way it is written," Mr. Crimp said. "I don't want to have to rewrite what is supposed to be your own specification."

continued on page 262

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Inadequate and confusing specifications often mislead builders, he remarked, noting that today's buildings are larger and more complicated; that it is harder now to define responsibilities of the various trades; and that architects have less and less time to learn about materials. He held that specifications should indicate the type and quality of materials desired; should show clearly whether perfection is required or standard quality, or if price is

the controlling factor. And in his opinion, no architect should become too deeply involved in specifications writing. This work should be delegated to office specification writers to leave the architect free for overall development of final plans.

Mr. Crimp called upon the design professions to provide leadership in the industry and he urged S.C.P.I. and the Producers' Council, Inc., to work with architects and engineers in developing new materials as the

architect and engineer define new needs.

The Military Building Outlook

The course for military expenditures in construction was outlined by H. B. Zackrison Jr., chief of the engineering division office of the Army Corps of Engineers. He indicated the outlays would level off rather than diminish in 1958. Caught by an expenditure ceiling, the services can obligate additional construction only within a narrow range dictated by obligations already incurred in relation to the ceiling.

The Army's limit is around \$350 million for the current fiscal year ending June 30. Only \$40 million to \$50 million more can be obligated, meaning contract awards will be deferred to May or June and no actual expenditures made on the projects this fiscal period.

The Air Force ceiling approximated \$1 billion, Mr. Zackrison said. As with the Army, the difference between already generated expenditure requirements and the ceiling is such that only nominal amounts of added contract awards will show up prior to May or June.

But these limitations have the effect not of diminishing the volume of material required for the programs but rather of leveling off these requirements, the speaker said.

The percentage of volume apportioned for building construction in the programs is somewhat less now than it has been in previous years. Improved standards are evident in both exterior appearance and quality of structure, the Corps spokesman asserted. Current military designs, said Mr. Zackrison, for both barracks and bachelor quarters specify brick exteriors. Inside, engineers have called for a greatly increased use of glazed tile, particularly in halls and latrines. Standard plans and definitive drawings for many other types of buildings—post restaurants, guest houses, Army Reserve Centers, regimental dispensaries and post exchanges—embrace increased use of brick, he said.

Still other improvements noted by Mr. Zackrison were use of more overhangs at eaves, improved fenestration, architectural treatment of the main entrances, and improved interior finishes. An increased number of these improved types are coming up for bidding soon, Mr. Zackrison said.

The 40,000 Capehart housing units programmed by the military are generating a far larger demand for brick and clay tile products than are projects to be built with appro-

continued on page 264

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priated funds; 27,000 of these were either under design or construction in November.

Altogether, several hundred different types of plans have been developed so far in the Capehart housing program—and all new designs are being prepared on the basis of modular measure. The Corps official explained that "we are currently studying the best of all these plans with the idea of adopting a relatively few as standards."

Dunwody Heads Institute

Kenneth W. Dunwody, Cherokee Brick and Tile Co., Macon, Ga., was elected president of the Institute, succeeding John H. Stewart of Canton, Ohio. The new vice president is Paul B. Belden, Jr., Canton, and George Gammie of Chicago was re-elected treasurer. Joseph J. Cermak of the Washington headquarters office continues to serve as secretary, and Douglas Whitlock as chairman of the board of general counsel.

Conventional Mortgage Aid System Proposed by Cole under FHA

Housing Administrator Albert M. Cole's tentative proposals for a partial mortgage insurance system in the Federal Housing Administration stirred up many shades of comment in the home financing industry and on Capitol Hill. There were accusations that the Federal agency was presenting essentially the same plan that the U. S. Savings and Loan League had proposed earlier, and Rep. Albert Rains (D-Ala.), housing subcommittee chairman, challenged the plan on grounds it would not achieve its objective.

Mr. Cole claimed that a partial canvass of industry had convinced him there would be no major resistance to the scheme.

Essentially, the FHA would supplement its present home loan insurance programs with the new scheme—a partial insurance of otherwise conventional mortgages. FHA would be insuring perhaps the top 20 per cent of these loans and with a minimum of participation feels it could dispense with much of the processing details attached to handling 100 per cent insured paper.

The housing administrator stresses the flexibility of such a plan and claims it could free large amounts of money for home mortgages that are not now attracted to this market. Application would be to single family units only.

Perhaps the most controversial feature of the plan is the fact that FHA would not specify any interest charges on such loans. The FHA commissioner would have the power to "take remedial action" in regard to rates, however, if he found it in the public interest to do so. Mr. Cole thinks that under this plan the small builder and small lender concerned with his own portfolio would be drawn toward its asserted advantages. He does not think that the loans should be made eligible for purchase by the Federal National Mortgage Association. Mortgage writing would be primarily the concern of the lender and this would be one reason that FHA itself would have less detail work to perform. As the plan was announced, not even the Minimum Property Standards which are essential in the operation of present FHA programs would apply to the new partially insured properties.

But Mr. Cole insisted the interests of the buyer would be fully assured under terms of the proposals. He adds that, like the Certified Agency Program now being tested in several

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continued on page 266



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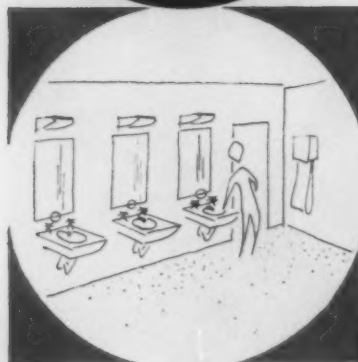
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Washington Topics

remote areas, the new partial insurance plan would "extend the area of service and broaden the base" of the government's housing operations.

A number of questions have been posed since this trial balloon ascended. Will Congress approve a system of government insurance of a loan, no matter how small the portion is, without a prescribed interest rate range? Can it draw more money into the market through its features of a reasonable down payment (10 per cent was talked about), longer amortization periods, the single mortgage, and low monthly payments? Will the plan provide substantially more housing for people of modest means? Mr. Cole believes there is an affirmative answer to these questions but admits that only trial in the marketplace could prove his convictions.

Looser Money

The housing agency announcement came on the heels of Federal Reserve Board action reducing rediscount rates at member banks. There were those who considered the FRB action a recognition that the nation's economy was pointing downward. Among these were representatives of organized labor. Said George Meany, AFL-CIO president, "The FRB's action is in the direction of encouraging economic growth at a time of declining employment and production, but it is merely a partial step as well as a belated one. A general reversal of the government's tight-money policy is needed to bolster the economy. . . . Long-neglected Federal public service and social welfare programs should be started as soon as possible. Such programs include Federal aid for education, Federal assistance for communities of chronic economic distress and a concerted Federal effort to provide public housing for low income families and to stimulate private and cooperative home construction for middle income groups."

—And Tightening Spending?

But the Federal government was not about to plunge into a program of "socialized" constructions. The signs pointed the other way. The Civil Aeronautics Administration was delaying its call for airport project applications for fiscal 1959. The announcement usually comes around September 1. Some observers read into the delay a disinclination on the part of the Administration to

continued on page 270



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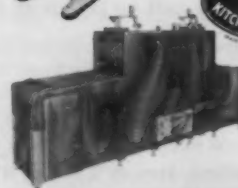


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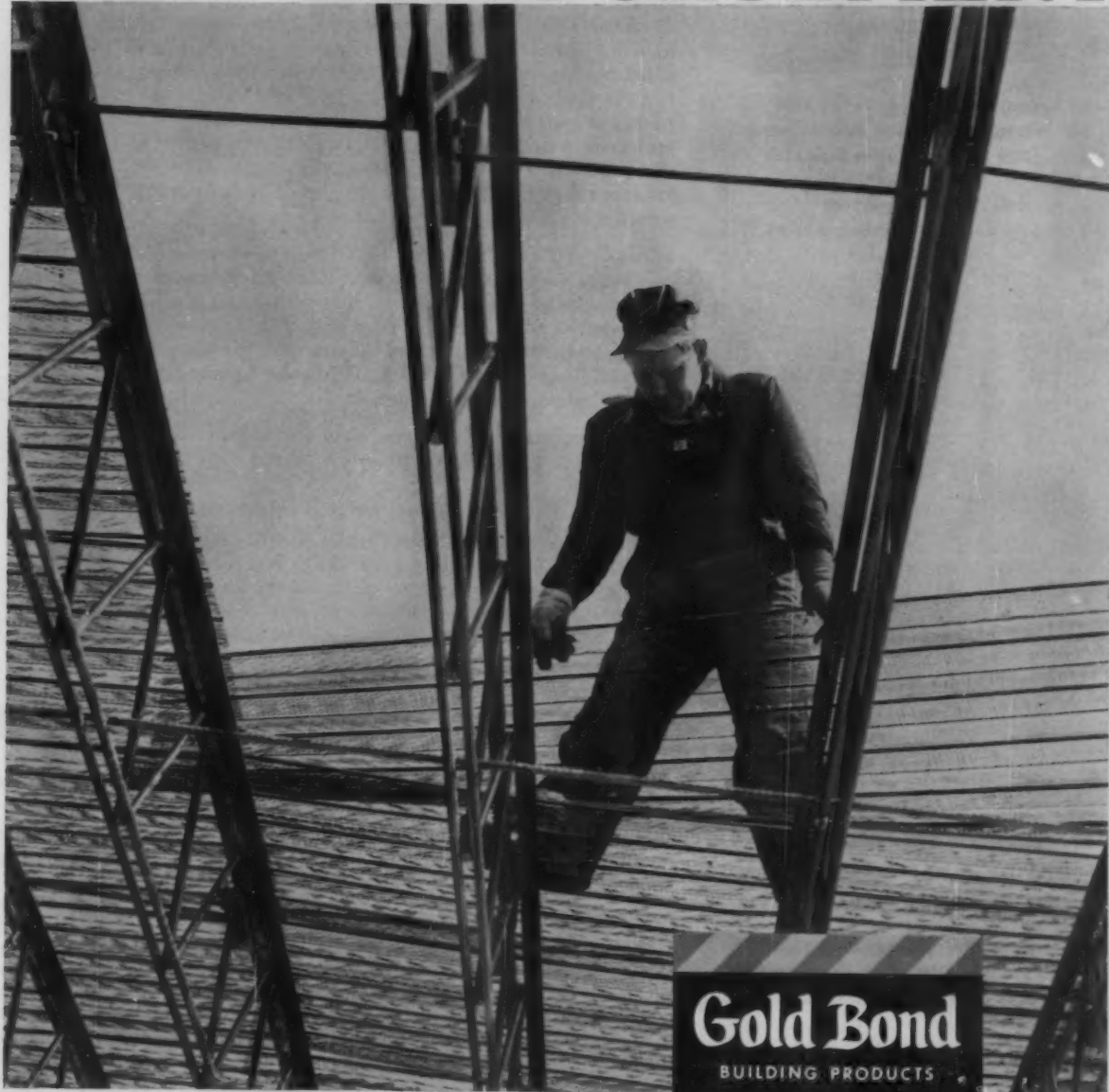
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Consult an engineering firm

If you are remodeling or building new power facilities, consult a qualified engineering firm. Such concerns—familiar with the latest in fuel costs and equipment—will effect great savings for you in efficiency and fuel economy over the years.

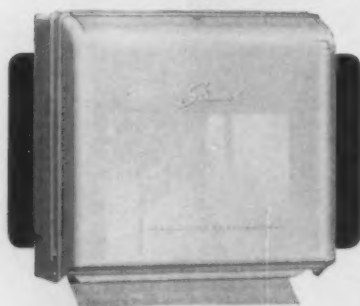
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Not only is bituminous coal the lowest-cost fuel in most industrial areas, but

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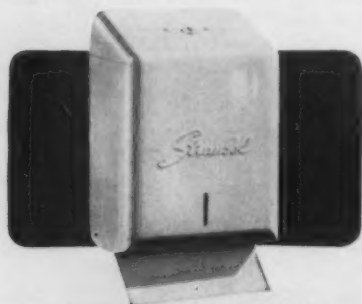
For additional case histories on burning coal the modern way or for technical advisory service, write to the address below.

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Washington Topics

seek an extension of the program beyond its expiration in fiscal 1959. If such was the intention, it would be indicated by a delay of the sort occurring, they pointed out. The CAA and the Undersecretary of Commerce for Transportation continued non-committal on the point. There was a fear the delay would push bond sales so far back that much of the spring construction season would be lost.

Meanwhile, state representatives on the President's Federal-State Task Force agreed that the states could take over gradually the government's program of advance planning grants for urban renewal projects. Public housing seemed to be the one field in which these state representatives felt the responsibility should remain primarily that of Uncle Sam. They voted down a proposal that states take over a small portion of the Federal subsidy payments on future low rent housing projects. A new study of the entire public housing and urban renewal picture in reference to Federal-state responsibilities is in prospect, however.

50,000 Brochures Recruit for Modular Building Standards

The new Modular Building Standards Association launched its initial membership drive by sending out some 50,000 brochures inviting affiliation. The four sponsoring organizations shared the task of mailing the membership invitations, each sending out a batch under covering letters. Sponsors are the American Institute of Architects, Associated General Contractors of America, National Association of Home Builders, and the Producers' Council, Inc. All segments of the construction industry have been covered—architects, contractors, home builders, suppliers, dealers, etc.

The M.B.S.A. has been described by its first president, Cyrus E. Silling, F.A.I.A., Charleston, W. Va., as a national nonprofit organization dedicated to the promotion by education and other means of the acceptance and application of the principles of modular measure and related subjects. It aims to apply MM to the field of planning for construction, and to the dimensioning of the materials, appliances and items of equipment employed in construction and related activities.

Any person, association, firm or corporation in sympathy with these objectives is eligible for membership.

continued on page 274

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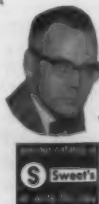
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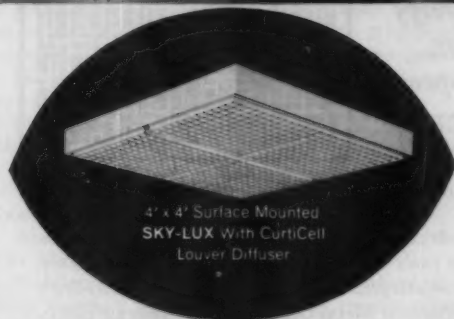
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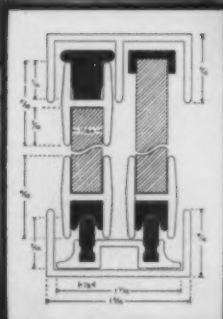
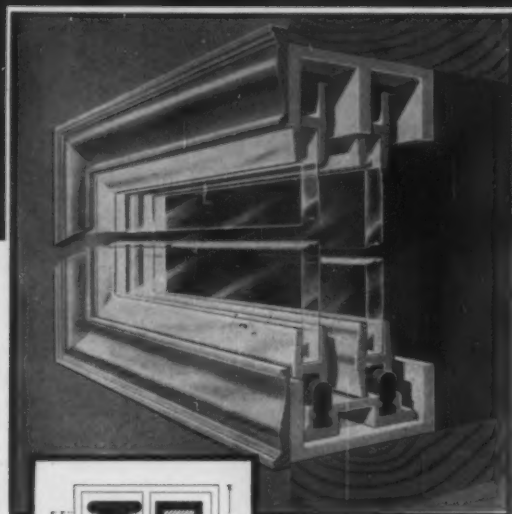
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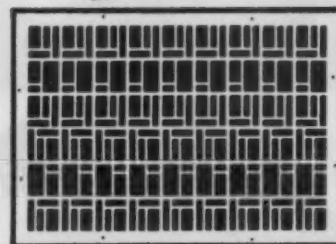
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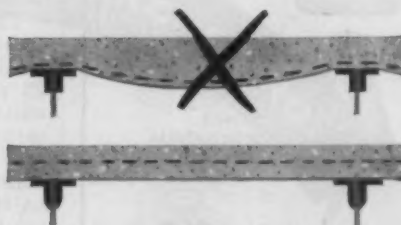
Finishing operations start sooner

Here are seven reasons why you can save both time and money by using Bethlehem Slabform, the steel form for concrete floors and roofs over steel joists:

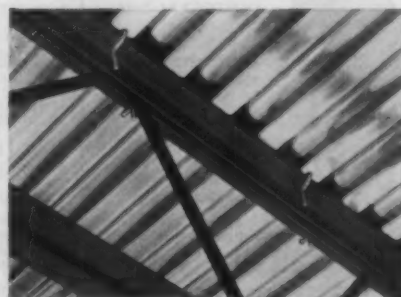
- 1. The solid Slabform permits concrete finishing to start much sooner than is possible with "flexible" centering. You can pour, level, screed, and finish without time lag, saving considerable time and labor.
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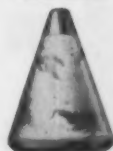
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Washington Topics

Housing Inventory Shows Increase Below New Construction Total

Preliminary figures from the 1956 National Housing Inventory have just been released by the Bureau of the Census showing a net increase of 9.4 million dwelling units (farm houses included) in the United States between April 1, 1950 and December 31, 1956. The Census effort preliminarily places the total number of dwelling units in the country at 55,340,000, an average annual gain of around 1,390,000 units for the six and three-quarter years.

While this was the most concentrated and complete effort to date to measure housing quantity, there were housing questions in connection with the regular 1940 and 1950 censuses and these showed an average annual gain of only 870,000 units between those years.

Perhaps the most significant finding from the latest housing census is that the net increase—9.4 million units—was less than the total new housing construction for the period, 10,920,000 units. The more than 1.5 million unit difference, Census explained, reflects net effect of losses to the inventory through demolition, merger, and other types of withdrawals and additions through conversions.

The greatest proportionate increase in the inventory was found inside standard metropolitan areas—23 per cent—while the number of units outside these metropolitan locations was increased by 16 per cent.

It was the first time that comprehensive figures have been collected on the kinds of changes that affect the housing supply. The recent enumeration was a sampling survey conducted during December 1956.

The Bureau cautioned that the NHI data should not be compared directly with the Bureau of Labor Statistics series on new permanent nonfarm dwelling units of the same period. The NHI results, for example, include 200,000 new trailers and 590,000 new farm houses which would not appear in the BLS series. After allowances for these and other differences, the NHI series was found to be approximately 25 per cent greater than the BLS series. Sampling variation, it was thought, might account for part of the difference.

Census officials were already in conference with representatives of the home building and financing industry preparing questions to be asked on housing in the 1960 census.

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50-foot bay of 200'x500' warehouse of Holman Transfer Company, Portland, Oregon. Cost averages \$3.00 a square foot including sprinkler system. Architect: G. K. Cochran, Portland. Contractors: Monson & Sivers, Portland.



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23 Cubic Feet of Storage in New Manitowoc Built-in 2-Zone



Acting on the belief that most freezer-refrigerator combinations are too small to be practical, the manufacturers of the built-in 2-Zone have designed a new square-styled unit with 10 cubic feet of refrigerator space and 13 cubic feet of freezer space. The freezer compartment, which holds 455 pounds of foods, is likely to meet any family's present and future storage needs.

The new built-in 2-Zone, surprisingly compact for its high capacity, requires little more space than a conventional refrigerator.

It is 82 inches high, with a cabinet 36 inches wide and 24 inches deep. Architects can easily match the new unit to any kitchen by specifying right- or left-hand doors and their choice of frost white, rich antique copper, lustrous Satinized stainless, or a prime coat for special color styling. Simple six-step instructions make installation quick and easy.

The approval seals of both Good Housekeeping and Parents' Magazine have been granted the 2-Zone, which reportedly sells at the lowest price per cubic foot of capacity. Complete information is offered to architects who write the manufacturer, Manitowoc Equipment Works, Manitowoc 38, Wis.

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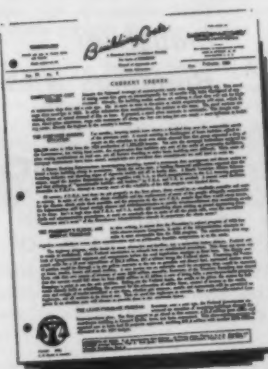
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2. Deformation
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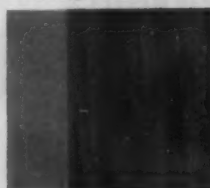


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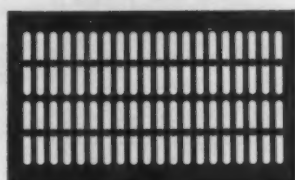
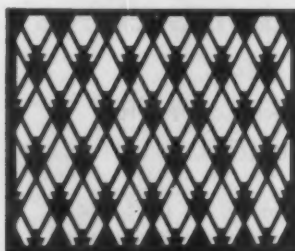
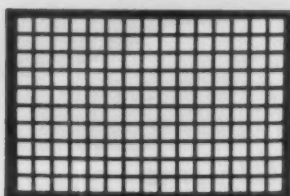
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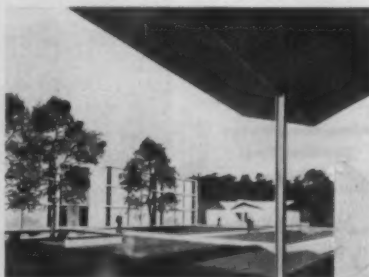
Campus-Type Navy BOQ Separates Living and Messing Areas

A campus plan which groups separate living, messing and recreation facilities around a central patio and the use of lift-slab construction distinguish the first permanent Bachelor Officer Quarters at Philadelphia Naval Base, now under construction. Vincent Kling is the architect.

The Philadelphia project, described as a prototype for future Navy BOQ's, consists of four buildings—two three-story structures to provide living quarters for 144 officers; a one-story unit for kitchen and dining hall; and a one-story lounge unit. Beyond the functional advantage of separating sleeping quarters from areas of noise and traffic, the plan also was seen as an opportunity to gain architectural interest for a flat, square site through the separate expressions of their functions. Cost is "in excess of \$1 million."

The living quarters will house 72 officers each, in private rooms of 180 sq ft with shared baths between. Concrete floor and wall slabs are poured on ground, one above the other, then lifted into place, with upper floors supported by the wall slabs below; it is believed this is the first application of this structural system in military housing.

Dining building (8926 sq ft) and lounge building (2025 sq ft) both will have screened outdoor courtyards and "floating" roofs, the lounge roof in the form of a star-shaped concrete shell.



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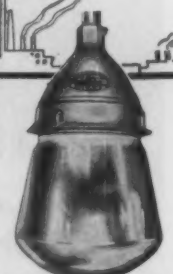
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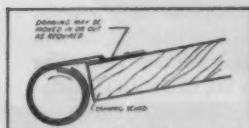


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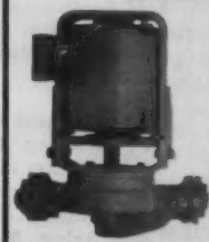
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Required Reading

continued from page 62

Acoustics

... *For the Architect*, by Harold Burris-Meyer and Lewis S. Goodfriend. This handbook is intended to give the architect enough information to handle acoustics and noise control without examining the basic physics involved. *Reinhold Publishing Corp.* (N. Y.), 1957. 126 pp., illus. \$10.00.

Handbook of Layout

... *And Dimensioning for Production*, by Hyman H. Katz, is designed to help the skilled draftsman do detail work with less supervision; the emphasis is on engineering drawing. *Macmillan Company* (N. Y.), 1957. 479 pp., illus. \$15.00.

Welding Handbook

Edited by Arthur L. Phillips, this first section of the fourth edition deals with fundamentals. (Four other sections will be published later.) *American Welding Society* (N. Y.), 1957. 560 pp., illus. \$9.00.

Fabricating Houses

... *From Component Parts: How to Build a House for \$6000*, by Norman Cherner, is aimed at both the layman and the professional. Five basic structural systems—panel, bent, girder, masonry and foundation, and Quonset—are demonstrated in fifteen expansible houses. *Reinhold Publishing Corp.* (N. Y.), 1957. 208 pp., illus. \$7.95. (Paper-bound edition published under subtitle at \$2.95.)

Modern School Shop

... *Planning*. This revised and enlarged edition includes check lists of standards for evaluating shop plans and facilities. *Prakken Publications* (Ann Arbor, Mich.), 1957. 184 pp., illus. \$3.85.

Housing

... *Through Non-Profit Organizations*. A report of a seminar sponsored by the United Nations and the government of Denmark, this publication includes detailed descriptions of a number of Danish housing projects and much general information on social and economic aspects of the topic. There is a summary of the seminar's main conclusions on action that should be taken by various levels of government, trade and craft organizations, communities in general, and individuals; also a bibliography. *United Nations* (N. Y.), 1956. 121 pp., illus. \$1.25.

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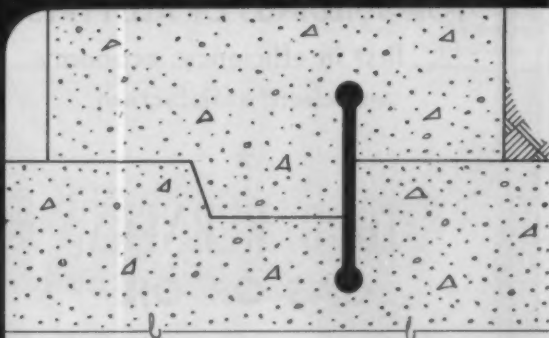
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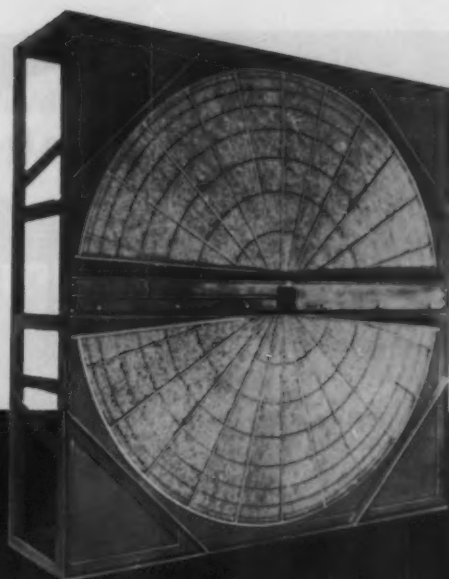


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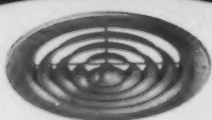
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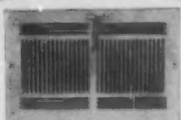


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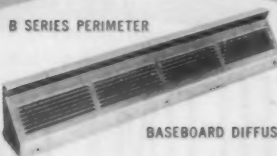
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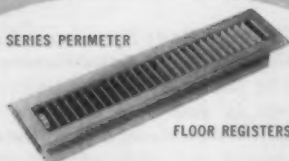
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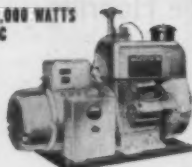
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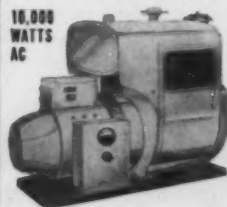
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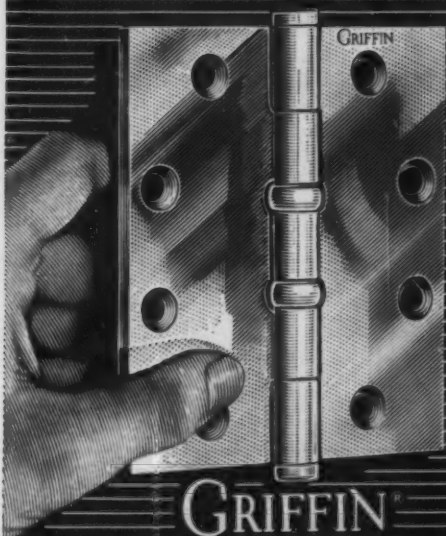
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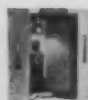
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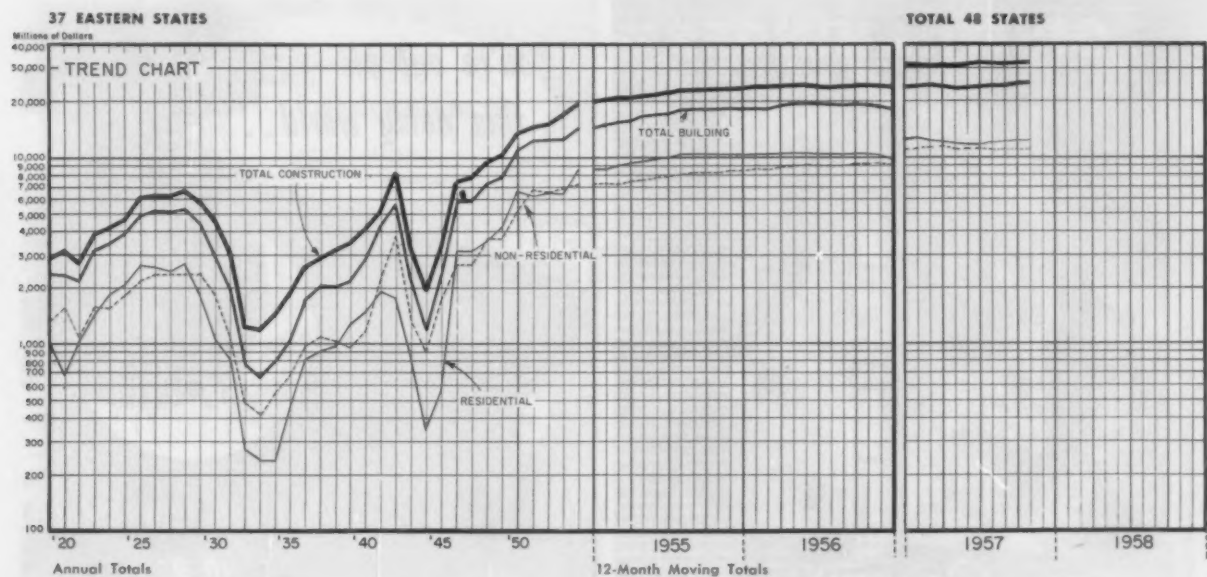


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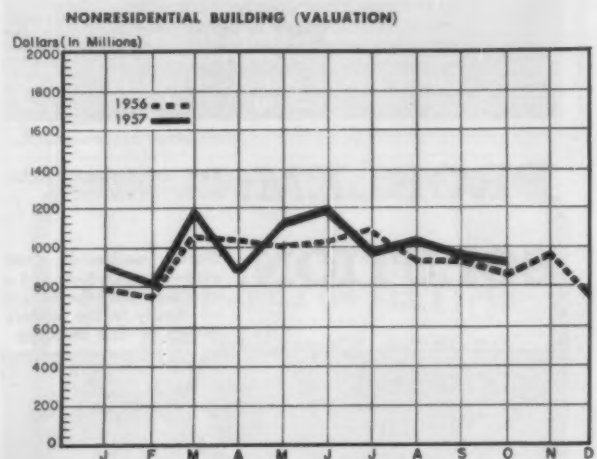
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As Reflected in Contracts for Future Construction in the U.S. Reported and Tabulated by F. W. Dodge Corporation



Monthly Tally Shows General Rise

An increase of seven per cent in total contracts for future construction was registered in October, as compared with October 1956, F. W. Dodge Corporation reported. The total for all categories was \$2,613,791,000 for the month. The three basic Dodge categories all reflected the upward trend: residential building, at \$1,165,380,000, up 11 per cent; nonresidential, at \$910,219,000, up five per cent and heavy engineering, at \$538,192,000, up two per cent. The October figures were felt by Dodge Vice Chairman Thomas S. Holden to "indicate renewed strength in the construction industry with probably favorable implications for the months ahead." Mr. Holden also considered it "encouraging to see contracts for industrial building rising after several months of decline" (see table). The cumulative total for all construction for the first ten months of 1957, at \$27,840,371,000, was two per cent above the 1956 period. Ten-month totals: residential, \$11,370,438,000, up one per cent; nonresidential, \$9,715,753,000, up two per cent; and engineering, \$6,754,180,000, up five per cent.



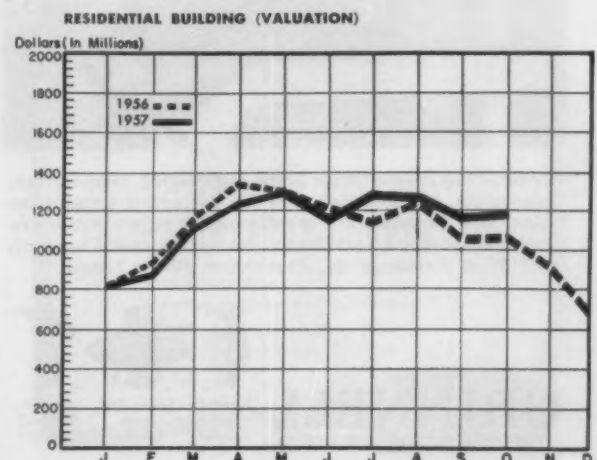
MANUFACTURING BUILDINGS

Construction Contracts—Regional Comparison

Valuation (in thousands of dollars)

REGION	1957 10 MONTHS	1956 10 MONTHS	% CHANGE
I Boston District	117,662	85,535	+38
II Buffalo, NYC, Phila.	322,182	329,106	-2
III Atlanta, Birmingham	182,022	204,643	-11
IV Cincinnati, Cleveland, Pittsburgh	282,433	291,592	-3
V Chicago, Detroit, Minneapolis	365,874	426,876	-14
VI New Orleans, St. Louis	134,765	171,698	-22
VII Dallas, Kansas City	151,738	174,002	-13
VIII 11 Western States	327,172	386,623	-15
48 STATE TOTALS	1,883,888	2,070,095	-9

* Factories are the subject of Building Types Study No. 234, pages 151-182



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specify
Hako
floor tile"



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Builder: "Individuality. That's what the buyers want. Got any more suggestions?"

Architect: "Yep—floors. Give them color, pattern. A real personal effect."

Builder: "How do you do it within MY cost structure? I've got to meet competitive prices!"

Architect: "Easy. Use asphalt tile—the colors and floor patterns make every home different inside. And the material is economical."

Builder: "Sounds good. We'd have no trouble putting it in and I'll have something that gives me a selling plus. I suppose any tile will do the job?"

Architect: "Oh no! I want you to be satisfied with color, price and value. That's why I always specify HAKO."

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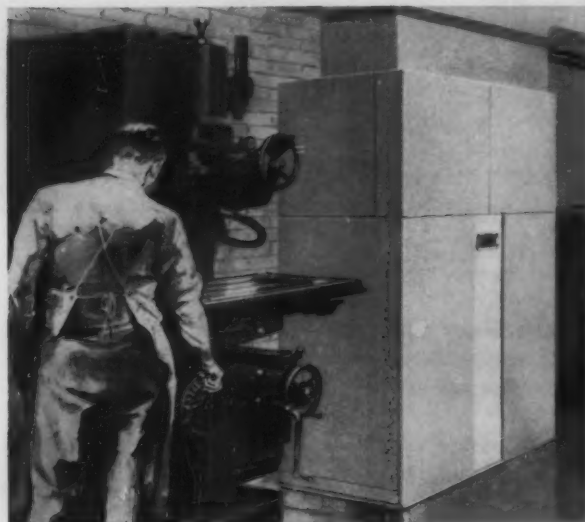
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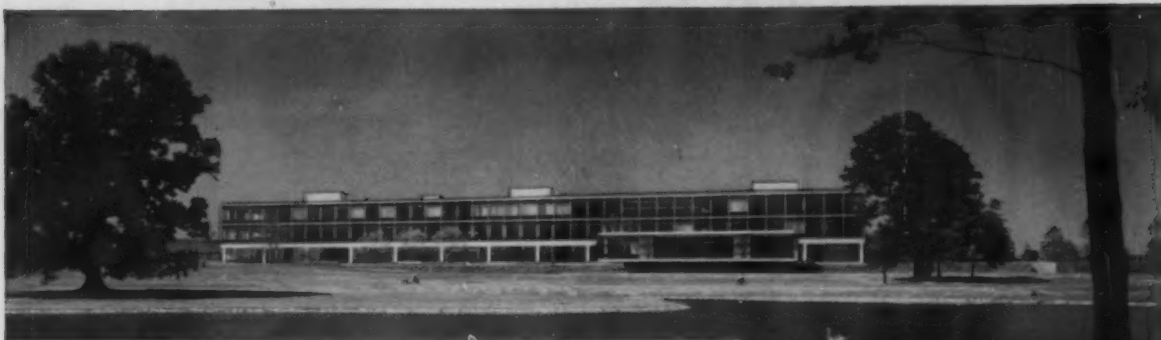
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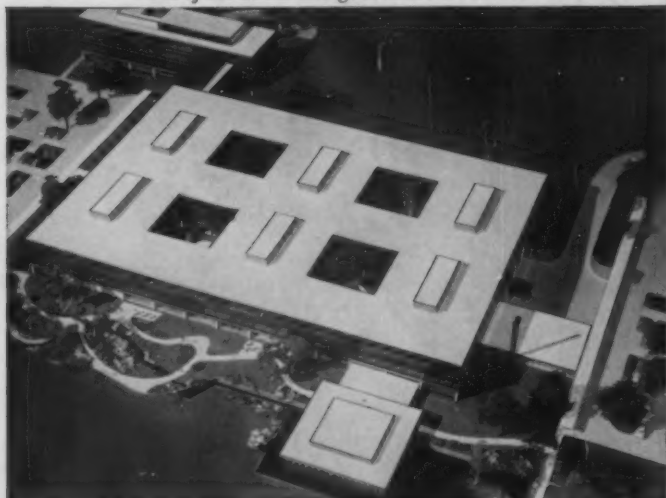
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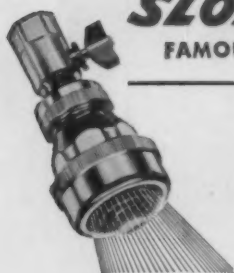


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